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VPDES PERMIT FACT SHEET

This document gives the pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a minor municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq. The discharge results from 0.25 MGD domestic sewage treatment plant with rotating biological contactors. This permit action consists of adding a yearly loading limit for total suspended solids; revising the ammonia and total residual chlorine limits; revising the *E. coli* monitoring requirements; and revising the special conditions. (SIC Code: 4952)

1. **Facility Name and Address:**
Floyd-Floyd County Public Service Authority WWTP
PO Box 407
Floyd, VA 24091
Location: 169 PSA Road, off State Route 221, west of Town of Floyd

2. **Permit No: VA0025992** Current Permit Expiration Date: December 15, 2012

3. **Owner Contact/ Facility Contact:**
N. Elwood Holden, Superintendent, (540) 745-2169; floydpsa@swva.net

4. **Application Complete Date:** May 7, 2012
Permit Drafted By: Becky L. France, Water Permit Writer
Date: October 11, 2012
DEQ Regional Office: Blue Ridge Regional Office
Reviewer: Kip D. Foster, Water Permit Manager
Reviewer's Signature: _____ Date: 10/23/12
Public Comment Period Dates: From 11/2/12 To 12/3/12

5. **Receiving Stream Classification:**

Receiving Stream:	Dodd Creek (River Mile: 3.64)		
Watershed:	VAW-N20R (West Fork Little River Watershed)		
River Basin:	New River		
River Subbasin:	NA		
Section:	2		
Class:	V		
Special Standards:	None		
7-Day, 10-Year Low Flow:	5.1 MGD	7-Day, 10-Year High Flow:	7.4 MGD
1-Day, 10-Year Low Flow:	4.7 MGD	1-Day, 10-Year High Flow:	6.3 MGD
30-Day, 5-Year Low Flow:	7.0 MGD	Harmonic Mean Flow:	12.9 MGD
30-Day, 10-Year Low Flow:	6.2 MGD	30-Day, 10-Year High Flow:	9.6 MGD
Tidal:	No	303(d) Listed:	Yes

(Bacteria and total suspended solids wasteload allocation TMDL have been assigned to this discharge. **Attachment A** contains a copy of the flow frequency determination memorandum.)

6. **Operator License Requirements:** III

7. **Reliability Class:** II

8. **Permit Characterization**:

( )	Private	( )	Interim Limits in Other Document
( )	Federal	( )	Possible Interstate Effect
( )	State		
(X)	POTW		
( )	PVOTW		

9. **Wastewater Treatment System:** A description of the wastewater treatment system is provided below. See **Attachment B** for wastewater treatment schematic and **Attachment C** for a copy of the site visit report. Treatment units associated with the discharge are listed in the table below.

Table I
DISCHARGE DESCRIPTION

Outfall Number	Discharge Source	Treatment (Unit by Unit)	Flow (Design) (MGD)
001	Floyd-Floyd County PSA STP (domestic and industrial wastewater)	bar screens (2) grit chambers (2) surge tank primary clarifiers (2) 2-stage rotating biological contactors (3) secondary clarifiers (2) gas chlorinator sulfur dioxide dechorinator aerobic digester sludge belt press sludge drying beds	0.25

Sewage is received into the headworks via an 8" sanitary sewer line. Only one of the two primary treatment trains is currently in operation. The flow passes through a manual bar screen to remove large objects and a grit chamber and then a surge tank that serves to dampen high flows that may result from multiple pump stations discharging simultaneously. The headworks are followed by a primary clarifier. From the clarifier, the wastewater flows to two parallel rotating biological contactors (RBC). The RBCs are separated by a baffle into two stages with a standard density media followed by a high density media stage. The flow from the RBCs is directed to a third,

high density media RBC for further treatment. The standard density media has approximately 100,000 ft^3 of surface area on a 27 foot shaft and the high density media has approximately 150,000 ft^3 of surface area on the same length shaft.

The wastewater flow is directed from the RBCs to one of two secondary clarifiers. Chlorine is added in the effluent line from the secondary clarifiers. The flow passes through a baffled chlorine tank. Sulfur dioxide is added for dechlorination as the flow leaves the chlorine contact tank. The effluent is discharged through a pipe to Dodd Creek. A schematic diagram of the treatment system may be found in **Attachment B**.

10. **Sewage Sludge Use or Disposal:** A VPDES Sewage Sludge Permit Application Form was submitted for this facility to address disposal of sewage sludge from the wastewater treatment facility. Primary and secondary sludge is collected at the sludge well and then pumped to the aerobic digesters via a four inch pipe. Sludge drying beds are available as a backup. Dry sludge is hauled to the New River Resource Authority in Dublin, Virginia.

11. **Discharge Location Description:** A portion of the USGS topographic map, which indicates the discharge location and other items of interest, is included in **Attachment D**. There are no significant (large) dischargers to the receiving stream or water intakes within the immediate area. The latitude and longitude of the discharge is N 36° 54' 37", E 80° 20' 17".

Name of Topo: Floyd Number: 051A

12. **Material Storage:** The permittee stores chlorine gas cylinder, sulfur dioxide, and polymer are stored indoors.

13. **Ambient Water Quality Information:** Memoranda or other information which helped to develop permit conditions (special water quality studies, STORET data, and any other biological and/or chemical data, etc.) are listed below.

Flow Frequencies

The facility discharges to Dodd Creek. Site-specific flow measurements were taken above the discharge in Dodd Creek over the period of September 1996 to September 1999. A regression analysis was performed using the Dodd Creek data and the data from a gauge from the Little River near Graysontown (#03170000). The relationship derived from the regression analysis was applied to the 2012 compilation of the USGS stream flow data for the Little River near Graysontown. Some of the critical stream flow values were slightly higher than those of the previous permit reissuance. See **Attachment A** for a summary of the flow frequencies.

Receiving Stream Water Quality Data

Background temperature and pH were available from STORET Station 9-DDD004.64. This station is located one mile upstream of the discharge. Upstream and effluent hardness data were collected on December 11, 2007. **Attachment E** contains these stream monitoring data.

Floyd-Floyd County PSA WWTP discharges directly to Dodd Creek. The discharge is located in the West Fork Little River Watershed (VAW-N20R). This watershed is listed on the 303(d) list as impaired due to bacteria and temperature. The Dodd Creek bacteria TMDL report was approved by the EPA on December 11, 2002 and by the State Water Control Board on June 17, 2004. The report study area includes 8.47 miles of Dodd Creek from its confluence with the West Fork of Little River upstream to the mouth of the West Fork of Dodd Creek. Refer to **Attachment E** for an excerpt from the EPA approved report which characterizes impairments and wasteload allocations.

14. **Antidegradation Review and Comments**: Tier 1 ____ Tier 2 **X** Tier 3 ____

The State Water Control Board's Water Quality Standards include an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with Tier determination. The facility discharges into Dodd Creek. Dodd Creek is not listed as a public water supply in the segment where the discharge is located. Dodd Creek is listed on Part I of the 303(d) list for exceedances of the water quality criteria for fecal coliform. However, according to Agency guidance, fecal coliform bacteria criteria should not be used relative to establishment of the antidegradation tier. Dodd Creek has been included in the TMDL study for benthic impairment (sediment) of the Little River. Floyd-Floyd County PSA WWTP has been assigned a total suspended solids TMDL wasteload allocation. However, Dodd Creek has not been designated on the 303(d) list as having benthic impairment. There are no pollutant data that indicate that the water quality of the stream is not better than the water quality standards. Therefore, this segment of Dodd Creek is classified as a Tier 2 water, and no significant degradation of existing quality is allowed.

For purposes of aquatic life protection in Tier 2 waters, "significant degradation" means that no more than 25 percent of the difference between the acute and chronic aquatic criteria values and the existing quality (unused assimilative capacity) may be allocated. For purposes of human health protection, "significant degradation" means that no more than 10 percent of the difference between the human health criteria and the existing quality (unused assimilative capacity) may be allocated. The antidegradation baseline for aquatic life and human health are calculated for each pollutant as follows:

Antidegradation baseline (aquatic life) = 0.25 (WQS – existing quality) + existing quality

Antidegradation baseline (human health) = 0.10 (WQS – existing quality) + existing quality

Where:
"WQS" = Numeric criterion listed in 9 VAC 25-260-5 et seq. for the parameter analyzed
"Existing quality" = Concentration of the parameter being analyzed in the receiving stream

When applied, antidegradation baselines become the new water quality criteria in Tier 2 waters, and effluent limits must be written to maintain the antidegradation baselines for each pollutant. Antidegradation baselines have been calculated as described above and included in **Attachment G**.

This wastewater treatment facility was upgraded in 2004 from a design capacity of 0.15 MGD to 0.25 MGD. So, antidegradation requirements apply to this facility. The antidegradation review was conducted as described in Guidance Memo 00-2011, and complies with the antidegradation policy contained in the Virginia Water Quality Standards. The permit limits are in compliance with antidegradation requirements set forth in 9 VAC 25-260-30.

15. **Site Inspection:** Date: 6/20/12 Performed by: Becky L. France
Attachment C contains a copy of the site inspection memorandum. The last technical and laboratory compliance inspection was performed on July 9, 2008 by Ryan Hendrix.

16. **Effluent Screening and Limitation Development:** DEQ Guidance Memorandum 00-2011 was used in developing all water quality based limits pursuant to water quality standards (9 VAC 25-260-5 et seq). **Attachment E** contains stream data and **Attachment F** contains effluent data. Limits are written to protect the water quality standards found in the antidegradation wasteload allocation spreadsheet in **Attachment G** and the regional water quality model output in **Attachment H**. See **Table II** on page 18 for a summary of limits and monitoring requirements.

A. **Mixing Zone**

The receiving stream is Dodd Creek. The MIXER program was run to determine the percentage of the receiving stream flow that could be used in the antidegradation wasteload allocation calculations. The program indicated that 100 percent of the 1Q10 and 7Q10 may be used for calculating the antidegradation acute and chronic wasteload allocations (AWLAs). A copy of the printout from the MIXER run is enclosed in **Attachment G**.

B. **Effluent Limitations for Conventional Pollutants**

Flow – The permitted design flow of 0.25 MGD for this facility is taken from the application for the reissuance. During the months of September 2008 through August 2012, the monthly average was 0.125 MGD and the maximum monthly average was 0.213 MGD. In accordance with the VPDES Permit Manual, flow is to be measured on a continuous basis with totalizing, indicating, and recording equipment.

pH – There were no exceedances of the pH limits during the months of September 2008 through August 2012. The pH limits of 6.0 S.U. minimum and 9.0 S.U. maximum are continued from the previous permit. These limits are based upon the water quality criteria in 9 VAC 25-260-50 for Class V receiving waters and are in accordance with federal technology-based guidelines, 40 CFR Part 133, for secondary treatment. Grab samples shall continue to be collected once per day.

Biochemical Oxygen Demand (BOD_5), Dissolved Oxygen – There were no exceedances of the BOD_5 or DO limits during the months of September 2008 through August 2012. See **Attachment F** for a compilation of these BOD_5 and DO data collected during the permit term.

In 2008, the Regional Water Quality Model for Free Flowing Streams program (Version 4.0) was run for a 3.6 mile stream segment following the discharge to determine if more stringent BOD_5, total kjeldahl nitrogen (TKN), or dissolved oxygen (DO) limits were needed to comply with water quality standards and prevent antidegradation to this Tier 2 water. To comply with antidegradation criteria for DO, TKN, and BOD_5, no significant lowering of DO is allowed. Significant lowering is defined as more than 0.20 mg/L from the existing level (90 percent DO saturation value). An initial DO of 3.0 mg/L, a TKN of 18.5 mg/L, and a BOD_5 of 30 mg/L were used in the model input. The model predicted a DO sag at the initial discharge point to 6.996 mg/L. The initial drop of 0.184 mg/L from the baseline complies with antidegradation policy. A copy of the model output results is found in **Attachment H**.

Since the 2008 reissuance, the low flow frequencies for the receiving stream have increased slightly. A 90^{th} percentile effluent temperature of 24 °C and a 90^{th} percentile stream temperature of 21 °C have been calculated for this reissuance. These temperature values are not higher than the 2008 model temperature value of 24.3 °C. Higher flow values and lower temperature values do not lower the limits generated by this regional water quality model. Therefore, the 2008 model output is valid for this reissuance.

The BOD_5 limits are technology-based requirements for municipal dischargers with secondary treatment required in accordance with 40 CFR Part 133. These limits of 30 mg/L (28 kg/d) monthly average and 45 mg/L (42 kg/d) weekly average are the same as the previous permit. Eight hour composite samples for BOD_5 shall continue to be collected 3 days/week. The minimum DO limit of 3.0 mg/L has been carried forward from the previous permit. Grab samples for DO shall continue to be collected 1/day.

Total Suspended Solids (TSS) – There were no exceedances of the TSS limits during the months of September 2008 through August 2012 (**Attachment F**). The TSS limits are based upon secondary treatment standards as mandated by the federal technology-based guidelines (40 CR Part 133.102). The facility is also required to meet a minimum technology based requirement of 85 percent removal efficiency for TSS.

Limits of 30 mg/L (28 kg/d) monthly average and 45 mg/L (42 kg/d) weekly average are continued from the previous permit. Eight hour composite samples shall continue to be collected 3 days/week.

The permit includes a TSS annual loading limit of 11.42 tons. The TSS total maximum daily load (TMDL) for the 0.15 MGD facility and a proposed 0.40 MGD facility has been included in the *Bacteria, Benthic, and Temperature Total Maximum Daily Loads for Little River Watershed of Floyd and Montgomery Counties, Virginia* (**Attachment E**) report. The TMDL wasteload allocations are based upon the facility meeting the monthly average limit of 30 mg/L. The TMDL was designed to accommodate increases in permit capacity such as the revised flow discharge rate of 0.25 MGD for the upgraded facility. Using a design flow of 0.25 MGD and a monthly average of 30 mg/L, the TMDL wasteload allocation for the 0.40 MGD facility given in the TMDL report has been scaled down to 11.42 tons. Updating the allocation for the TSS TMDL will be protective of the wasteload allocation allowances given in the TMDL report.

The Discharge Monitoring Report (DMR) shall show the total monthly load (tons) and cumulative calendar year-to-date (tons), and annual load (tons) calculated in accordance with the following formulas:

$ML = ML_{max} * d$

where:

ML = total monthly load in tons
ML_{max} = maximum daily load in tons
[max daily concentration (mg/L) x flow[1] (MGD) x 0.00417]
d = number of discharge days in the calendar month

[1]Flow shall be used for the maximum daily concentration value.

$AL\text{-}YTD = \sum_{(Jan\text{-}\ current\ month)} ML$

where:

AL-YTD = cumulative calendar year-to-date load in tons

The TSS load for each calendar year shall be shown on the December DMR due January 10th of the following year. The first TSS annual loading is due by January 10, 2014.

E. coli – There were five exceedances of the *E. coli* limit during the months of September 2008 through August 2012 (**Attachment F**). The fecal coliform Total Maximum Daily Load (TMDL) report for the Dodd Creek Watershed was approved by the EPA on December 11, 2002 and the State Water Control Board on June 17, 2004. This TMDL was modified to include a wasteload allocation for the expansion of the Floyd -Floyd County PSA WWTP to a design capacity of 0.25 MGD. EPA approved this modification on August 18, 2003.

A wasteload allocation of 6.91E +11 cfu/year has been set for Floyd-Floyd County PSA WWTP. This wasteload allocation is based upon a design capacity of 0.25 MGD and a fecal coliform concentration of 200 cfu/100 mL. Bacterial limits are written in terms of *E. coli* rather than fecal coliform. An *E. coli* geometric mean limit of 126 cfu/100 mL has been included in the permit. This limit is more stringent than the fecal coliform wasteload allocation, therefore the *E. coli* limit complies with the TMDL.

A monthly average limit of 126 cfu/100 mL (geometric mean) has been continued in the permit as a means of verifying that the facility is complying with the TMDL wasteload allocation and ensuring adequate disinfection. The Water Quality Standards, 9 VAC 25-260-170, have been revised to indicate that the geometric mean "shall be calculated using all data collected during any calendar month with a minimum of four weekly samples. If there are insufficient data to calculate a monthly geometric mean..., no more than 10% of the total samples in the assessment period shall exceed 235 *E. coli* cfu/100 mL. " If fewer than four weekly samples are collected during a discharge month, a single sample maximum limit of 235 cfu/100 mL applies. Grab samples shall be collected once per week between 10 AM and 4 PM. The permit also includes a special condition (Part I.C) describing these reporting requirements.

C. **Effluent Limitations for Toxic Pollutants**

In the 2008 reissuance permit, the permittee was required to complete analysis for most pesticides and PCBs (EPA method 608), base neutral extractables, acid extractables, and volatiles. Total cyanide, hydrogen sulfide, and tributyltin were also required. With the exception of cyanide, analysis results of analysis were below quantification. The cyanide data and the acute and chronic antidegradation wasteload allocations (AWLAs) were entered into the STATS program to determine if there was a reasonable potential to exceed the wasteload allocations. The program output indicated that a limit is not needed for total cyanide. See **Attachment F** for a copy of the water quality standards monitoring and **Attachment G** for a copy of the STATS program output.

Ammonia as Nitrogen – There were four exceedances of the ammonia limits during the months of September 2008 through August 2012 (**Attachment F**). All of these exceedances occurred in September and October. The ammonia limits have been reevaluated using higher stream flow data. The updated 90th percentile effluent temperature and pH data reported on the facility's Discharge Monitoring Reports were used to determine the antidegradation wasteload allocations (AWLAs). The acute and chronic AWLAs were used in the STATS program to determine the reasonable potential to exceed the wasteload allocations during the high flow months of January through May and the low flow months of June through December. As recommended in Guidance Memo 00-2011, a default ammonia concentration of 9 mg/L was input into the program.

The STATS program determined that for the high flow months of January through May, limits of 10 mg/L monthly average and 14 mg/L weekly average are needed. These limits are the same as the previous permit.

The STATS program determined that for June through December, limits of 6.5 mg/L monthly average and 8.7 mg/L weekly average are needed. These limits are slightly higher than the previous permit. In accordance with 9 VAC 31-220 L.2b, backsliding on a limit is allowed when there is new information which was not available at the time of the previous reissuance that would have justified the application of a less stringent effluent limitation. A higher 7Q10 stream flow results in a higher chronic AWLA and higher acute and chronic limits.

Eight hour composite samples shall continue to be collected three times per week. **Attachment G** contains the spreadsheet used to calculate the AWLAs and the results of the reasonable potential determination for ammonia (STATS program).

Total Residual Chlorine (TRC) – The TRC limits in the permit have been reassessed with the AWLAs that were determined from the revised stream flow frequencies. Based on the acute and chronic AWLAs and the Agency's STATS program, permit limits of 0.043 mg/L monthly average and 0.051 mg/L weekly average are needed. These limits are slightly higher than the previous permit. In accordance with 9 VAC 31-220 L.2b, backsliding on a limit is allowed when there is new information which was not available at the time of the previous reissuance that would have justified the application of a less stringent effluent limitation. A higher 7Q10 stream flow results in a higher chronic AWLA and higher acute and chronic limits. Grab samples shall continue to be collected 1/day. See **Attachment G** for the AWLA spreadsheet and STATS program output.

Copper, Total Recoverable – There were two exceedances of the copper limit in May of 2012. See **Attachment F** for a summary of the copper data collected from September 2008 through August 2012. The copper limits have been reevaluated using the revised water quality criteria to determine if they are stringent enough. The revised AWLAs and data were entered into the STATS program to force a limit. The STATS program output indicates that limits of 27 µg/L monthly average and 27 µg/L weekly average are needed. These limits are being carried forward from the previous permit. Eight hour composite samples shall continue to be taken 1/month. See **Attachment G** for the AWLA spreadsheet and STATS program output.

Zinc, Dissolved – There is one dissolved zinc data point of 60 µg/L collected via grab sample on January 29, 2008. This datum has been reevaluated using the revised water quality criteria to determine if a limit is needed. The STATS program output indicates that a limit is not needed for zinc (**Attachment G**).

Temperature – Daily temperature monitoring is being required in the reissued permit. These data will be reported as a maximum daily average for the purposes of calculating the 90th percentile effluent temperature and calibrating the Regional Water Quality

Model. The 90th percentile temperature is used in the AWLA spreadsheet calculations. The temperature water quality criteria as per 9 VAC 25-260-50 for this Class V receiving stream is 20 °C.

17. **Basis for Sludge Use and Disposal Requirements:** The sludge from the treatment facility is periodically transported to the City of Martinsville WWTP. There are no limits or monitoring requirements associated with sludge use or disposal beyond compliance with the Sludge Management Plan approved with the reissuance of the permit.

18. **Antibacksliding Statement:** Total residual chlorine and ammonia limits are less stringent than the previous permit. A higher 7Q10 stream flow results in a higher chronic AWLA and higher acute and chronic limits. This exception to the antibacksliding provisions is allowed in accordance with 9 VAC 31-220 K.2b which states that backsliding on a limit is allowed when there is new information which was not available at the time of the previous reissuance that would have justified the application of a less stringent effluent limitation. There are no other limits less stringent than the previous permit, so the permit limits comply with the antibacksliding requirements of 9 VAC 25-31-220 L.2b of the VPDES Permit Regulations.

19. **Compliance Schedules:** For this reissuance, there are no compliance schedules.

20. **Special Conditions:** A brief rationale for each special condition contained in the permit is given below.

A. **Additional Total Residual Chlorine (TRC) Limitations and Monitoring Requirements (Part I.B)**

Rationale: This condition requires that the permittee monitor the TRC concentration after chlorine contact. In accordance with 40 CFR 122.41 (e) permittees are required, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. It specifies *E. coli* limits when alternative disinfection methods are used. This condition is required by Sewerage Collection and Treatment Regulations, 9 VAC 25-790, bacteria standards. These requirements ensure proper operation of chlorination equipment to maintain adequate disinfection.

B. ***E. coli* Reporting Requirements (Part I.C)**

Rationale: The Water Quality Standards, 9 VAC 25-260-170 establishes bacteria water quality standards. The standards set bacteria monitoring requirements. This special condition is needed to describe requirements for when there is insufficient data (four weekly samples) to calculate a monthly geometric mean.

C. **Compliance Reporting (Part I.D.1)**

Rationale: In accordance with VPDES Permit Regulation, 9 VAC 25-31-190 J4 and 220 I, DEQ is authorized to establish monitoring methods and procedures to compile and

analyze data on water quality. This condition is necessary when toxic pollutants are monitored by the permittee and a maximum level of quantification and/or specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. This condition also establishes protocols for calculation of reported values.

D. **95% Capacity Reopener (Part I.D.2)**

Rationale: This condition requires that the permittee address problems resulting from high influent flows, in a timely fashion, to avoid non-compliance and water quality problems from plant overloading. This requirement is contained in 9 VAC 25-31-200 B4 of the VPDES Permit Regulations and applies to all POTWs and PVOTWs.

E. **CTC, CTO Requirement (Part I.D.3)**

Rationale: This condition is required by Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790.

F. **Operations and Maintenance Manual Requirement (Part I.D.4)**

Rationale: An Operations and Maintenance Manual is required by the Code of Virginia Section 62.1-44.19; the Sewage Collection and Treatment Regulations, 9 VAC 25-790; and the VPDES Permit Regulation, 9 VAC 25-31-190 E.

G. **Licensed Operator Requirement (Part I.D.5)**

Rationale: The VPDES Permit Regulation, 9 VAC 25-31-200 C, the Code of Virginia § 54.1-2300 et seq., and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) require licensure of operators. A Class III operator is required for this facility.

H. **Reliability Class (Part I.D.6)**

Rationale: A Reliability Class II has been assigned to this facility. Reliability class designations are required by Sewage Collection and Treatment Regulations, 9 VAC 25-790 for all municipal facilities.

I. **Sludge Reopener (Part I.D.7)**

Rationale: This condition is required by VPDES Permit Regulation, 9 VAC 25-31-220 C for all permits issued to treatment works treating domestic sewage to allow incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the Clean Water Act.

J. **Sludge Use and Disposal (Part I.D.8)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-100 P; 220 B2; and 420 and 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal. This special condition, in accordance with Guidance Memo 97-004, clarifies that the Sludge Management Plan approved with the reissuance of this permit is an enforceable condition of the permit.

K. **Total Suspended Solids Load Calculations (Part I.D.9)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 J4 and 220 I authorizes the establishment of procedures to compile and analyze data. The special condition has been added to provide formulas for calculating the monthly loadings and annual loading for total suspended solids (TSS). The calculation of an annual TSS loading is needed to demonstrate compliance with the TSS Total Maximum Daily Load (TMDL) allocation assigned to this discharge.

L. **Total Maximum Daily Load (TMDL) Reopener (Part I.D.10)**

Rationale: Section 303(d) of the Clean Water Act requires that Total Maximum Daily Loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under Section 303 of the Act.

M. **Treatment Works Closure Plan (Part I.D.11)**

Rationale: In accordance with State Water Control Law § 62.1-44.19, this condition is used to notify the owner of the need for a closure plan in the event a treatment works is being replaced or is expected to close.

N. **Permit Application Requirement (Part I.D.12)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-100.D and 40 CFR 122.21(d)(1) require submission of a new application at least 180 days prior to expiration of the existing permit. In addition, the VPDES Permit Regulation, 9 VAC 25-31-100 E.1 and 40 CFR 122.21 (e)(1) note that a permit shall not be issued before receiving a complete application.

O. **Significant Discharger Survey (Part I.E)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulations.

P. **Conditions Applicable to All VPDES Permits (Part II)**

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. **Changes to the Permit:**

A. **The following special conditions have been added to the permit:**

1. An *E. coli* Reporting Requirements Special Condition (Part I.C) has been added to comply with the Water Quality Standards 9 VAC 25-260-170 for when there are insufficient data (four weekly samples) to calculate a monthly geometric mean.

2. A Total Suspended Solids Loading Calculations Special Condition (Part I.D.10) has been added to provide formulas for calculating an annual loading.

3. A Permit Application Requirement Special Condition (Part I.D.12) has been added to remind the permittee of the requirement to submit a reissuance application six months prior to the expiration of the permit.

B. **Special conditions that have been modified from the previous permit are listed below: (The referenced permit sections are for the new permit.)**

1. The Additional Total Residual Chlorine Limitations and Monitoring Requirements Special Condition (Part I.B) has been modified to reflect changes in the Water Quality Standards.

2. The Compliance Reporting Special Condition (Part I.D.1) has been modified to include information about significant figures.

3. The Operations and Maintenance Manual Requirement Special Condition (Part I.D.4) has been modified to reflect current VPDES Permit Manual recommendations.

C. **The following special condition has been removed from the previous permit:**

The Water Quality Criteria Monitoring Special Condition (Part I.C.9) has been removed because the facility has submitted the water quality data for this special condition.

D. **Permit Limits and Monitoring Requirements: Table III** on page 19 summarizes changes to permit limits and monitoring requirements.

22. **Variances/Alternate Limits or Conditions:** No variances or alternate limits are included in this permit. A waiver request for Form 2A application monitoring to allow 8 hour composite sample data (BOD_5 and TSS) collected during the permit term for calculations on the application was submitted by the permittee. Also, the permittee required a waiver to allow collection of one 8 hour composite sample in lieu of three 24 hour composite samples for nitrate and nitrite, total kjeldahl nitrogen, phosphorus, and dissolved solids. The permittee also requested that *E. coli* data be used for the application in lieu of fecal coliform. All these waivers were granted.

23. **Regulation of Treatment Works Users:** VPDES Permit Regulation 9 VAC 25-31-280 B9 requires that every permit issued to a treatment works owned by a person other than a state or municipality provide an explanation of the Board's decision on the regulation of users. The Town of Floyd, a municipality, owns this treatment work; therefore, this regulation does not apply. The Significant Industrial Survey required for the facility's industrial users is in Part I.E. of the permit.

24. **Public Notice Information required by 9 VAC 25-31-280 B:**

All pertinent information is on file and may be inspected and copied by contacting Becky L. France at:

Virginia Department of Environmental Quality
Blue Ridge Regional Office
3019 Peters Creek Road
Roanoke, VA 24019
(540) 562-6700
becky.france.deq.virginia.gov

Persons may comment in writing or by e-mail to the DEQ on the proposed permit action and may request a public hearing during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for the comments. Only those comments received within this period will be considered.

The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state (1) the reason why a hearing is requested; (2) a brief informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and (3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will

become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may review the draft permit and application at the Blue Ridge Regional Office in Roanoke by appointment. A copy of the public notice is found in **Attachment I.**

25. **303(d) Listed Segments (TMDL):** Floyd – Floyd County PSA WWTP discharges directly to Dodd Creek. The discharge is located in the Dodd Creek and West Fork Dodd Creek Watershed (VAW-N20R). This watershed is listed on the 303(d) list as impaired due to bacteria and temperature. The *Bacteria, Benthic, and Temperature Total Maximum Daily Loads for Little River Watershed of Floyd and Montgomery Counties, Virginia* (**Attachment E**) report identifies the source of temperature impairment for this watershed as solar radiation. The Floyd-Floyd County PSA WWTP was not identified as an impairment source and therefore was not assigned a TMDL wasteload allocation for the temperature impairment.

The Dodd Creek bacteria TMDL report entitled *Fecal Coliform TMDL for Dodd Creek Watershed, Virginia* was approved by the EPA on December 11, 2002 and by the State Water Control Board on June 17, 2004. The report study area includes 8.47 miles of Dodd Creek from its confluence with the West Fork of Little River upstream to the mouth of the West Fork of Dodd Creek. This TMDL was modified to include a wasteload allocation for the expansion of the Floyd – Floyd County PSA STP to a design capacity of 0.25 MGD. EPA approved this modification on August 18, 2003. A wasteload allocation of 6.91E +11 cfu/year has been set for the Floyd – Floyd County PSA WWTP. This wasteload allocation is based upon a design capacity of 0.25 MGD and a fecal coliform concentration of 200 cfu/100 mL. Bacterial limits are written in terms of *E. coli* rather than fecal coliform. An *E. coli* geometric mean limit of 126 cfu/100 mL has been included in the permit. This limit is more stringent than the fecal coliform wasteload allocation, therefore the *E. coli* limit complies with the TMDL. Refer to **Attachment E** for an excerpt from the EPA approved report which characterizes impairments and wasteload allocations.

The permit includes a TSS annual loading limit of 11.42 tons. The total maximum daily load (TMDL) for the 0.15 MGD facility and a proposed 0.40 MGD facility has been included in the *Bacteria, Benthic, and Temperature Total Maximum Daily Loads for Little River Watershed of Floyd and Montgomery Counties, Virginia* (**Attachment E**) report. The benthic impaired study area consists of 16.99 miles of the Little River from the confluence with the West Fork Little River to the confluence with Sidney Creek. This TMDL report was approved by the EPA on March 14, 2012. The TMDL was designed to accommodate increases in permit capacity such as the revised flow discharge rate of 0.25 MGD for the upgraded facility. Using a design flow of 0.25 MGD, the TMDL wasteload allocation has been scaled down to 11.42 tons. Updating the allocation for the TSS TMDL will be protective of the wasteload allocation allowances given in the TMDL report.

26. **Additional Comments**

A. **Reduced Monitoring:** In accordance with Guidance Memo 98-2005, all permit applications received after May 4, 1998, are considered for reduction in effluent

monitoring frequency. Only facilities having exemplary operations that consistently meet permit requirements may qualify for reduced monitoring. To qualify for consideration of reduced monitoring requirements, the facility should not have been issued any Warning Letters, Notices of Unsatisfactory Laboratory Compliance, Letter of Noncompliance (LON) or Notices of Violation (NOV), or be under any Consent Orders, Consent Decrees, Executive Compliance Agreements, or related enforcement documents during the past three years. The permittee received NOVs and Warning Letters, but due to the nature of these enforcement letters, the facility has not been disqualified from a reduced monitoring data evaluation.

The facility received the following Warning Letters and Notice of Violation (NOV) reports within the past two years:

Notice of Violation No. W2012-09-W-0002	*E. coli* and copper exceedances
Warning Letter No. W2012-08-W-1004	*E. coli* exceedances
Warning Letter No. W2012-07-W1001	Copper exceedances
Warning Letter W2012-06-W-1002	Failure to submit Water Quality Standard Monitoring Report
Warning Letter W2010-09-W-1002	*E. coli* exceedance
Warning Letter W2010-01-W-1003	*E. coli* exceedances
Warning Letter W2009-11-W-1003	Ammonia exceedance

The facility does not meet the criteria discussed above, and therefore is not eligible for reduced monitoring.

B. **Previous Board Action:** None

C. **Staff Comments:** The discharge is not controversial. The discharge is in conformance with the existing planning documents for the area. The permittee is current with their annual permit maintenance fee. On May 21, 2011, an application review memorandum was received from Virginia Department of Health (VDH), Engineering Field Office. VDH commented that there are no public water supply raw water intakes within 15 miles downstream of the discharge.

D. **Public Comment:** No comments were received during the comment period.

E. **Tables**

F. Attachments

A. Flow Frequency Memorandum
B. Wastewater Treatment Schematics
C. Site Inspection Report
D. USGS Topographic Map
E. Ambient Water Quality Information
- STORET DATA (Station 2-DDD0004.64)
- 2010 Impaired Waters Fact Sheet for Dodd Creek (Temperature)
- Fecal Coliform TMDL and Modification for Dodd Creek (Excerpt)
- Bacteria, Benthic, and Temperature TMDL for Little River Watershed (Excerpt)

F. Effluent Data
G. Wasteload and Limit Calculations
- Mixing Zone Calculations (MIXER 2.1)
- Antidegradation Wasteload Allocation Spreadsheet
- STATS Program Results (ammonia, copper, cyanide, TRC, zinc)

H. Regional Water Quality Model (Version 4.0)
I. Public Notice
J. EPA Checksheet

Table II
BASIS FOR LIMITATIONS

OUTFALL: 001
DESIGN FLOW: 0.25 MGD

( ) Interim Limitations
(x) Final Limitations

Effective Dates - From: Effective Date
To: Expiration Date

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	NA	NA	NL	Continuous	TIRE
pH (Standard Units)	1, 2	NA	6.0	NA	9.0	1/Day	Grab
BOD_5	1	30 mg/L 28 kg/day	45 mg/L 42 kg/day	NA	NA	3 Days/Week	8 HC
Total Suspended Solids	1	30 mg/L 28 kg/day	45 mg/L 42 kg/day	NA	NA	3 Days/Week	8 HC
Total Residual Chlorine	2	0.043 mg/L	0.051 mg/L	NA	NA	1/Day	Grab
Dissolved Oxygen	2,3	NA	NA	3.0 mg/L	NA	1/Day	Grab
Temperature	1	NA	NA	NA	NL ^{o}C	1/Day	IS
Copper, Total Recoverable	2	27 µg/L	27 µg/L	NA	NA	1/Month	8 HC
Ammonia as Nitrogen (Jan. – May)	2	10 mg/L	14 mg/L	NA	NA	3 Days/Week	8 HC
Ammonia as Nitrogen (June – Dec.)	2	6.5 mg/L	8.7 mg/L	NA	NA	3 Days/Week	8 HC
E. coli	2,4	126 cfu / 100 mL (Geometric Mean)	NA	NA	235 cfu/100 mL	1/Week	Grab
Total Suspended Solids (monthly load)	4	NA	NA	NA	NL tons	1.Month	Calculated
Total Suspended Solids (cumulative year-to-date)	4	NA	NA	NA	NL tons	1/Month	Calculated
Total Suspended Solids (tons/calendar year)	4	NA	NA	NA	11.42 tons	1/Year	Calculated

NA = Not Applicable NL = No Limitations, monitoring only TIRE = totalizing, indicating, recording equipment 8 HC = 8 hour composite IS = Immersion Stabilization

The basis for the limitations codes are:

1. Federal Effluent Guidelines: (Secondary Treatment Requirement)
2. Water Quality Criteria
3. Regional Water Quality Model
4. Total Maximum Daily Load (Dodd Creek)

Table III
PERMIT PROCESSING CHANGE SHEET

LIMITS AND MONITORING SCHEDULE:

Outfall No.	Parameter Changed	Monitoring Requirement Changed		Effluent Limits Changed		Reason for Change	Date
		From	To	From	To		
001	*E. coli*			126 cfu/100 mL (geometric mean)	126 cfu/100 mL (geometric mean) or 235 N/100 mL maximum	Water Quality Standards revised to require geometric mean to be calculated from 4 samples. Alternative maximum limit applies if less than 4 samples collected during the month.	9/26/12
001	Total Suspended Solids (TSS) (monthly loading)	NA	1/ month			The monthly loading is needed to track compliance with annual TMDL load for TSS.	9/26/12
001	Total Suspended Solids (calendar year-to-date)	NA	1/month			Monitoring has been added to track compliance with the annual TMDL load for TSS.	9/26/12
001	Total Suspended Solids (tons/year)	1/year	NA	NA	11.42 tons/calendar year	Annual TSS limit has been added to ensure compliance with the annual TMDL loading limit.	9/26/12
001	Total Residual Chlorine			0.041 mg/L monthly average, 0.046 mg/L weekly average	0.043 mg/L monthly average, 0.051 mg/L weekly average	Increased low flow stream frequencies resulted in higher antidegradation wasteload allocations and higher limits. Backsliding exemption applies due to new stream flow information.	9/26/12
001	Ammonia (June – Dec.)			6.2 mg/L monthly average, 8.3 mg/L weekly average	6.5 mg/L monthly average, 8.7 mg/L weekly average	Increased low flow stream frequencies resulted in higher antidegradation wasteload allocations and higher limits. Backsliding exemption applies due to new stream flow information.	9/26/12

Attachment A

Flow Frequency Memorandum

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
3019 Peters Creek Road Roanoke, Virginia 24019

SUBJECT: Flow Frequency Determination
Floyd-Floyd County PSA (VA0025992) - Reissuance

TO: Permit File

FROM: Becky L. France, Water Permit Writer

DATE: September 17, 2012

The Floyd Town sewage treatment plant discharges to the Dodd Creek near Floyd, VA. Stream flow frequencies are required at this site in developing effluent limitations for the VPDES permit.

The VDEQ conducted several flow measurements on the Dodd Creek from 1996 to 1999. The measurements were made above the Floyd WWTP outfall. The measurements correlated very well with the same day daily mean values from the continuous record gage on the Little River at Graysontown, VA (#03170000). The measurements and daily mean values were plotted on a logarithmic graph and a best fit line was drawn through the data points. The most current (1929-2011) flow frequencies from the reference gage were plugged into the equation for the regression line and the associated flow frequencies at the measurements site/discharge point were calculated. The data for the reference gage and the measurement site/discharge point are presented below.

Regression Equation: $y = 0.3205x^{0.7615}$

$R^2 = 0.9697$

Little River near Graysontown, VA (#03170000)
Drainage Area = 309 mi^2

1Q30 = 48 cfs	High Flow 1Q10 = 88 cfs
1Q10 = 60.1 cfs	High Flow 7Q10 = 110 cfs
7Q10 = 66.8 cfs	High Flow 30Q10 = 155 cfs
30Q10 = 86.2 cfs	HM = 227 cfs
30Q5 = 101 cfs	

Dodd Creek at Floyd STP, at Floyd, VA (#03169220)
Drainage Area = 19.25 mi^2

1Q30 = 6.1 cfs (3.9 MGD)	High Flow 1Q10 = 9.7 cfs (6.3 MGD)
1Q10 = 7.3 cfs (4.7 MGD)	High Flow 7Q10 = 11.5 cfs (7.4 MGD)
7Q10 = 7.9 cfs (5.1 MGD)	High Flow 30Q10 = 14.9 cfs (9.6 MGD)
30Q10 = 9.5 cfs (6.2 MGD)	HM = 19.9 cfs (12.9 MGD)
30Q5 = 10.8 cfs (7.0 MGD)	

The high flow months are January through May.

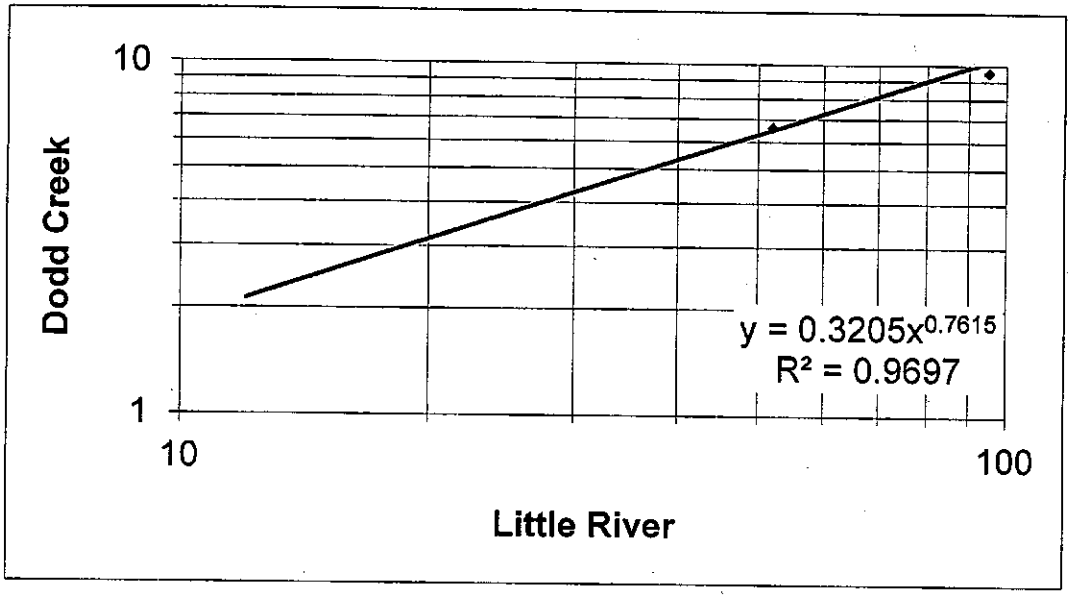
Little River near Graysontown, VA (reference gage #03170000)
vs Dodd Creek at Floyd STP (measurement site #03169220).

Historic Flow Data (cfs)

Date	Little River	Dodd Creek
9/26/96	246	20.1
6/30/97	261	22.9
9/8/97	95	9.53
8/3/98	137	14
10/5/98	130	14.8
6/8/99	121	11.4
9/2/99	52	6.63
	(Reference)	(Meas. Site)

2011 Flow Frequencies (cfs)

Little River		Dodd Creek
48	1Q30	6.1
60.1	1Q10	7.3
66.8	7Q10	7.9
86.2	30Q10	9.5
101	30Q5	10.8
88	HF1Q10	9.7
110	HF7Q10	11.5
155	HF30Q10	14.9
227	Harmonic Mean	19.9
300	DA (mi^2)	19.25



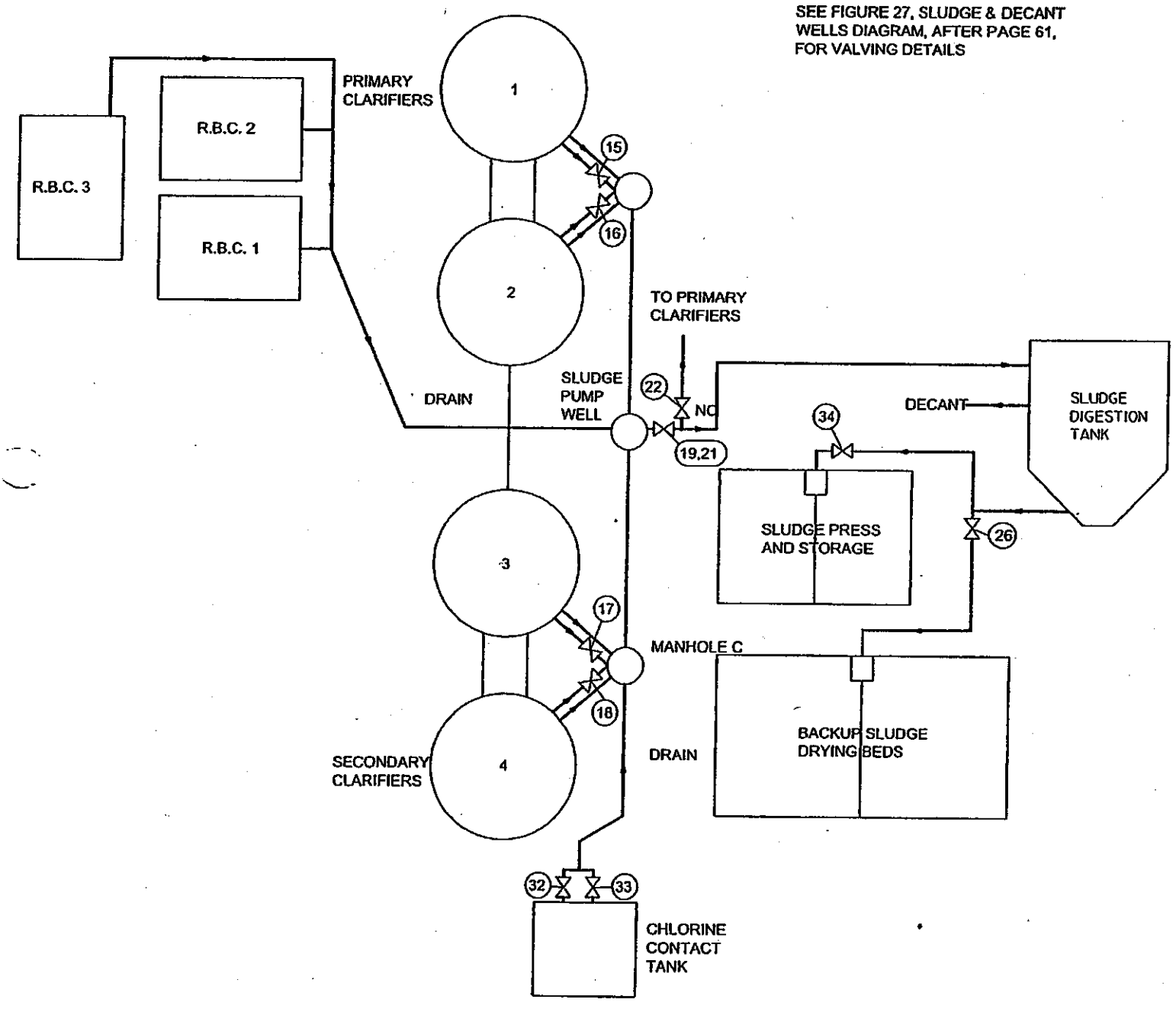
HARMEAN	HF30Q10	HF7Q10	HF1Q10	Z30Q5	Z30Q10	Z7Q10	Z1Q10	Z1Q30	HFMTHS	STATPERIOD	YRSTRN	NOTES
227	155	110	88	101	86.2	66.8	60.1	48	JAN-MAY	1929-2011	2012	

	Dodd Creek Meas. Site, cfs	Dodd Creek Meas. Site, mgd	Little River Ref gage, cfs	Little River Ref gage, mgd
1Q30	6.1	3.9	48	31.0
1Q10	7.3	4.7	60.1	38.8
7Q10	7.9	5.1	66.8	43.2
30Q10	9.5	6.2	86.2	55.7
30Q5	10.8	7.0	101	65.2
HF1Q10	9.7	6.3	88	56.8
HF7Q10	11.5	7.4	110	71.1
HF30Q10	14.9	9.6	155	100.1
Harmonic Mean	19.9	12.9	227	146.6

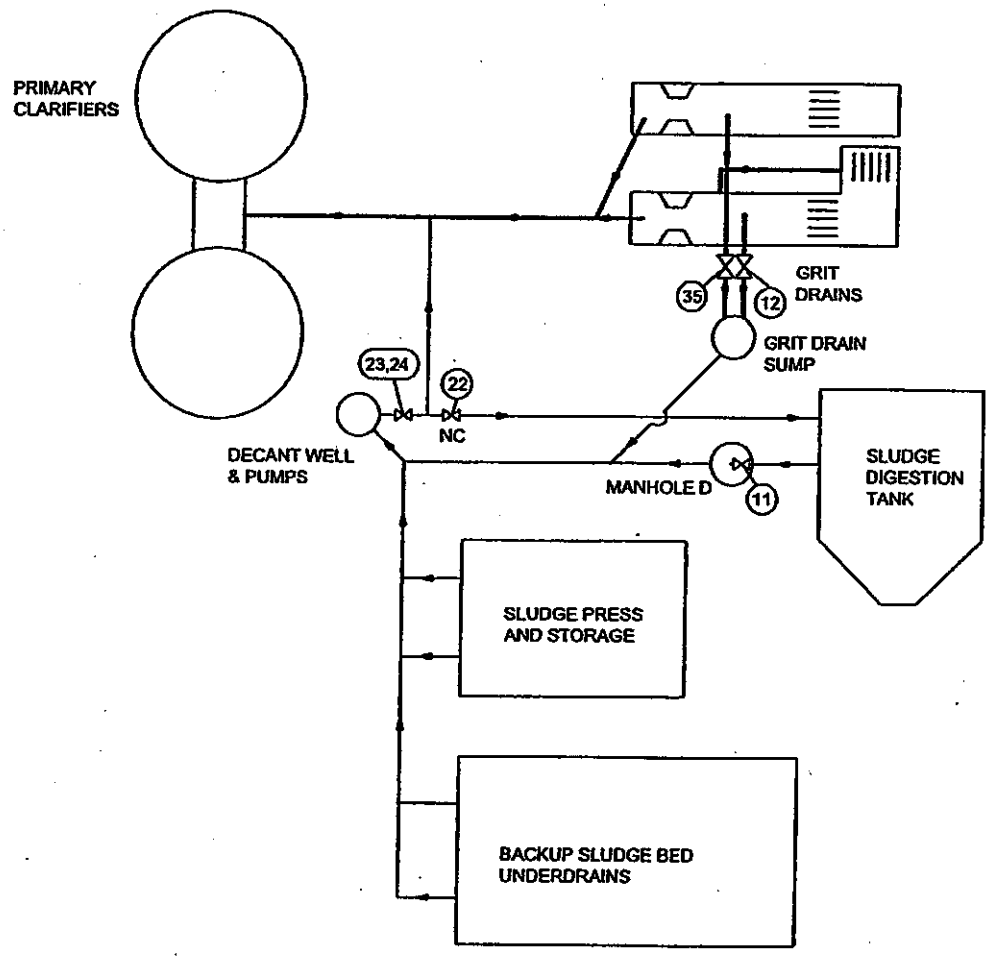
HF months January - May

Attachment B

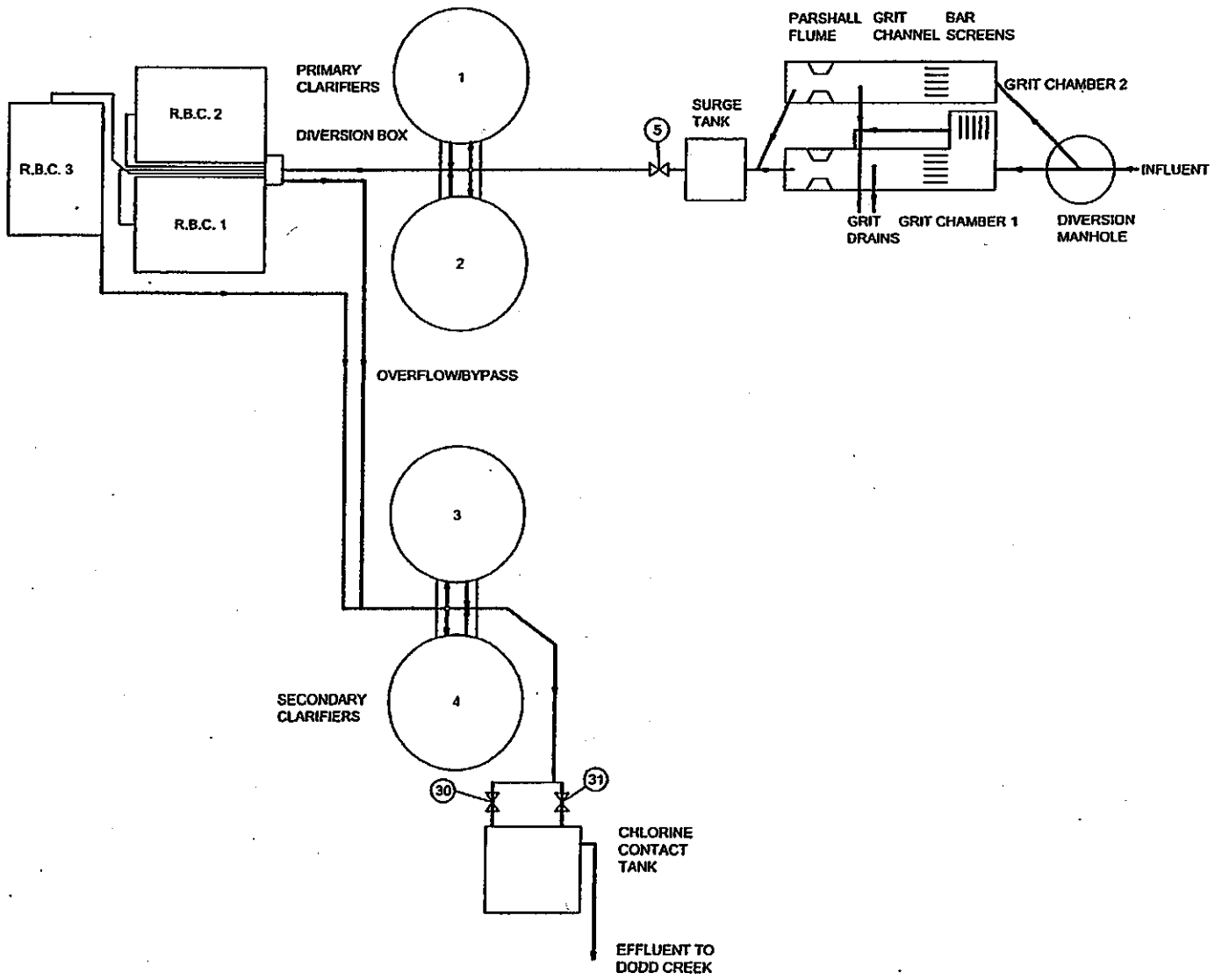
Wastewater Schematics



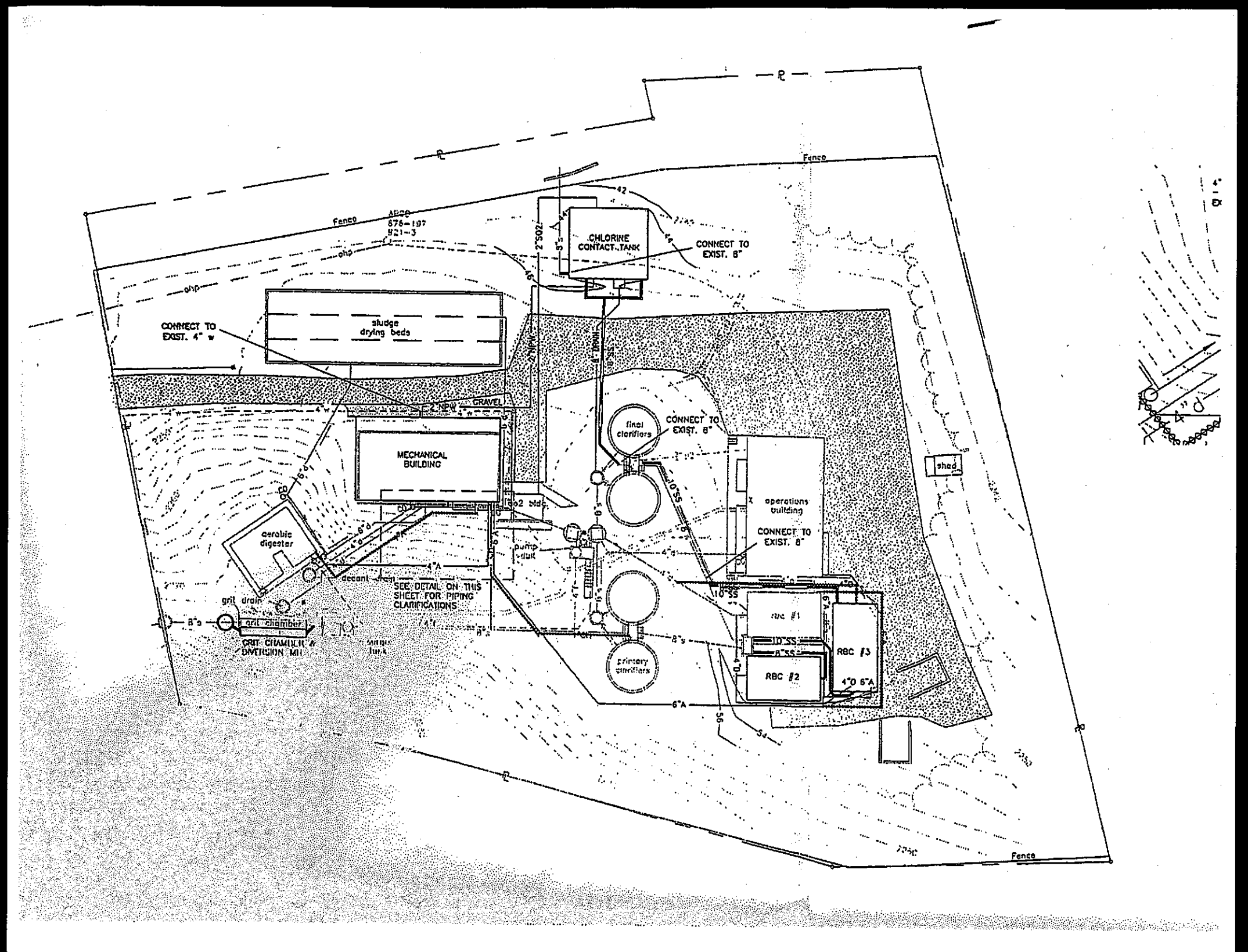
SLUDGE & DRAIN PIPING DIAGRAM
FIG. 7



DECANT PIPING DIAGRAM
FIG. 8



MAIN PIPING DIAGRAM
FIG. 9


Fence
Fence
Fence
Fence
CHLORINE CONTACT TANK
CONNECT TO EXIST. 8"
CONNECT TO EXIST. 4" w
sludge drying beds
GRAVEL
MECHANICAL BUILDING
final clarifiers
CONNECT TO EXIST. 8"
shed
operations building
CONNECT TO EXIST. 8"
aerobic digester
pump station
decant
SEE DETAIL ON THIS SHEET FOR PIPING CLARIFICATIONS
grit drain
grit chamber
GRIT CHAMBER & DIVERSION MH
RBC #1
RBC #3
RBC #2
primary clarifiers

Google earth

feet 90
meters 20

Attachment C

Site Inspection Report

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Blue Ridge Regional Office

3019 Peters Creek Road Roanoke, VA 24019

SUBJECT: Site Inspection Report for Floyd-Floyd County WWTP
Reissuance of VPDES Permit No. VA0025992

TO: Permit File

FROM: Becky L. France, Water Permit Writer

DATE: July 11, 2012

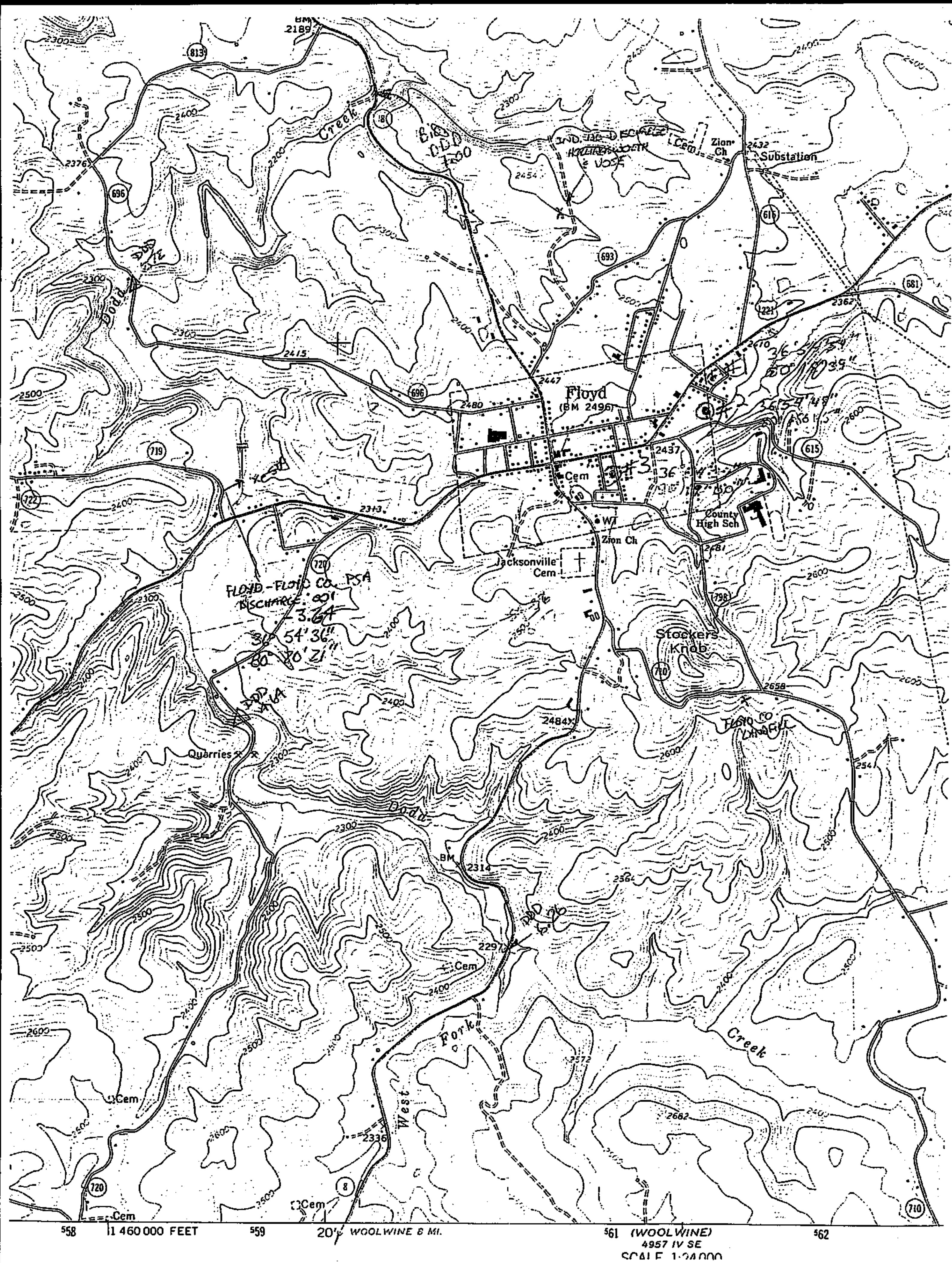
On June 20, 2012, a site visit was conducted at the Floyd -Floyd County PSA WWTP. This secondary treatment facility consists of two manual bar screens, two grit chambers, surge tank, two primary clarifiers, three 2-stage rotating biological contactors (RBCs), two secondary clarifiers, gas chlorination, sulfur dioxide dechlorination, and aerobic sludge digester. In 2004, the design flow capacity for this facility was upgraded to 0.25 MGD.

The wastewater enters the plant through an 8 inch sewer main to one of two parallel bar screen. Then, the wastewater flows through one of two parallel grit chambers. The wastewater from this channel flows through a 3-inch Parshall flume. Currently, only one of these treatment trains is in operation. This wastewater flows into a surge tank and then into one of two parallel 15 foot diameter primary clarifiers. From the clarifier, the wastewater flows into two parallel rotating biological contactors (RBCs). At the time of the site visit, the surface of RBCs had a very light coat and an earthy odor. The RBCs are separated by a baffle into two stages with a standard density media followed by a high density media stage. The flow from the first two RBCs is directed to a third, high density media RBC for further treatment. The wastewater is directed from the RBCs to one of two parallel 15 foot diameter secondary clarifiers. The wastewater overflows the weir of the secondary clarifier and enters a diversion chamber. At this point chlorine is added. Then, the flow passes through a baffled chlorine tank. Sulfur dioxide is added for dechlorination as the flow leaves the chlorine contact tank. The treated wastewater flows through a pipe to Dodd Creek. Flow is measured by an ultrasonic flow meter located at a V-notched weir.

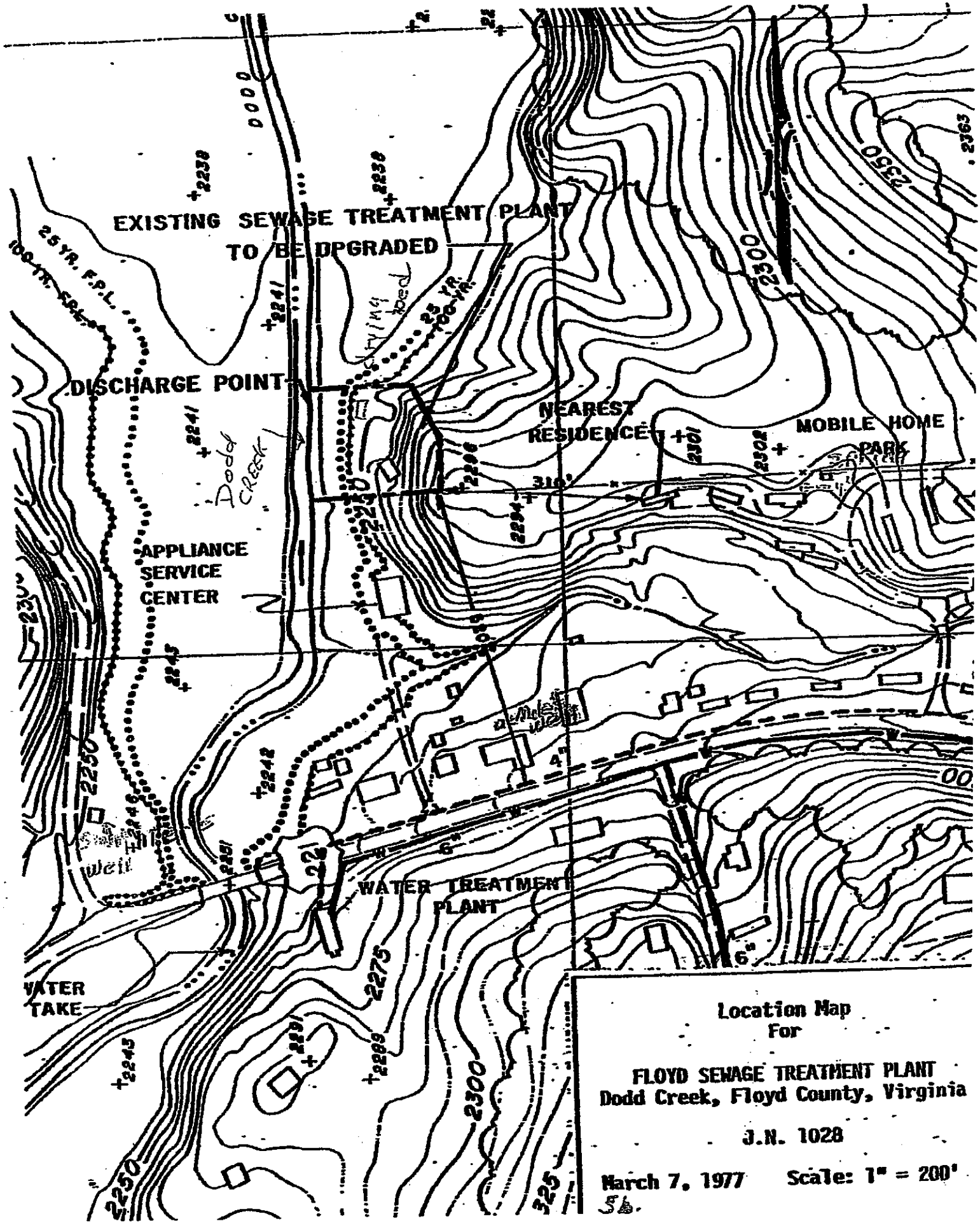
Sludge from the tanks drains to a sludge well. Sludge is pumped from the sludge well to the aerobic digester. Periodically sludge is drawn off the digesters. This sludge gravity flows to a flocculation tank where a polyacrylamide emulsion polymer is added to aid in the dewatering by the belt press. Flocculated sludge flows down a sludge feed chute to the dewatering belt. The dried sludge is transported to the New River Resource Authority in Dublin for disposal. Two drying beds are available as an alternative method of dewatering sludge. The beds consist of an underdrain system, a layer of open graded crushed stone, and a cover of sand. At the time of the site visit, the drying beds were not being used.

Attachment D

USGS Topographic Map



Floyd
(BM 2496)
Cem
Zion Ch
Substation
WT
County High Sch
Jacksonville Cem
Stockers Knob
Quarries
Dodd
Creek
West Fork
BM 2189
BM 2314
2447
2480
2437
2481
2415
2313
2362
2432
2454
2376
2484
2658
2297
2336
2572
2682
FLOYD-FLOYD CO. PSA
DISCHARGE 001
3.64
36° 54' 36"
80° 20' 21"
FLOYD CO LANDFILL
558
1 460 000 FEET
559
20' WOOLWINE 8 MI.
561 (WOOLWINE)
4957 IV SE
SCALE 1:24000
562



Location Map
For

FLOYD SEWAGE TREATMENT PLANT
Dodd Creek, Floyd County, Virginia

J.N. 1028

March 7, 1977 Scale: 1" = 200'

5b.

Attachment E

Ambient Water Quality Information

- **STORET Data (Station 2-DDD0004.64)**
- **2010 Impaired Waters Fact Sheet for Dodd Creek (Temperature)**
- **Fecal Coliform TMDL and Modification for Dodd Creek (Excerpt)**
- **Bacteria, Benthic, and Temperature TMDL for Little River Watershed (Excerpt)**

9-DDD004.64 (Dodd Creek, Route 720 Bridge 1 mile upstream of Floyd WWTP)
VAW-N20R

Collection Date Time	Temp Celsius	pH (S.U.)
02/12/1990 12:30	5.8	8.53
05/07/1990 13:00	15	7.89
08/07/1990 12:30	18	7.9
11/01/1990 13:30	11.2	8.5
10/22/1991 14:00	16.3	8
01/28/1992 14:00	7.3	7.63
04/07/1992 10:30	15.1	8.19
07/15/1992 14:00	21.7	8.4
10/19/1992 13:30	7.6	8.4
01/25/1993 14:00	3.5	7.6
04/14/1993 14:00	15.2	7.6
07/15/1993 13:30	22.4	7.7
10/27/1993 13:00	13.4	7.8
01/24/1994 14:30	4.3	8.46
04/06/1994 13:30	12.7	8.2
07/13/1994 13:00	20.7	7.77
10/18/1994 13:00	11	7.1
01/24/1995 13:30	1.8	7.8
04/10/1995 13:30	17.5	8.8
07/17/1995 15:00	24.5	7.6
10/05/1995 13:30	18.5	6.9
01/17/1996 13:00	5.5	7
04/03/1996 14:30	12	7.9
07/15/1996 13:30	20.1	8
11/26/1996 14:30	8.6	7.7
01/08/1997 14:30	3.6	8.3
04/02/1997 15:00	12	8.5
07/08/1997 14:30	20.3	7.8
10/20/1997 14:30	12.7	7.6
01/12/1998 14:00	6	7.3
04/14/1998 14:00	14	8
07/20/1998 15:00	23.7	7.6
10/27/1998 15:00	11.6	7.6
01/12/1999 14:00	4.5	7.4
04/05/1999 15:30	14.5	8.1
07/14/1999 15:00	17.8	8.3
11/18/1999 14:30	6.5	8.1
01/13/2000 15:00	8.3	7.8
03/08/2000 15:00	15.4	7.7
05/04/2000 15:00	20.5	
08/10/2005 15:00	22.4	7.9
10/27/2005 13:30	7.5	7.1
12/19/2005 15:00	3.1	8
02/21/2006 13:55	7	8
04/06/2006 13:00	10	8
06/08/2006 13:45	17.5	6.9
08/14/2006 14:45	21	7.9
10/05/2006 14:00	16.7	7.3
12/14/2006 13:25	5.6	7.8

90th Percentile Temp	21.1 °C	
90th Percentile Temp	15.4 °C	(January - May)
90th Percentile pH	8.4 S.U.	
10th Percentile pH	7.2 S.U.	

9-DDD004.64 (Dodd Creek, Route 720 Bridge 1 mile upstream of Floyd WWTP)
VAW-N20R

Dissolved Metals

Collection Date Time	As (ug/L)	Cd (ug/L)	Cr (ug/L)	Cu (ug/L)	Pb (ug/L)	Th (ug/L)	Ni (ug/L)	Ag (ug/L)	Zn (ug/L)	Sn (ug/L)	Se (ug/L)	Hg (ng/L)
06/25/2001 11:30	<0.29	<0.2	<0.29	<0.54	<0.2	<0.2	<0.39	<0.2	<2	<0.2	<1	<3

2010 Impaired Waters

Categories 4 and 5 by DCR Watershed*

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

New River Basin

Fact Sheet prepared for DCR Watershed: N20*

Cause Group Code: **N20R-02-TEMP** **Dodd Creek**

Location: Dodd Creek from it's confluence with the West Fork Little River upstream to the mouth of the West Fork of Dodd Creek

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water/ 5C

The 2010 assessment finds the Aquatic Life Use is impaired for 8.47 miles due to temperature exceedances of these Class V (21°C) stockable trout waters criterion. The impairment is extended upstream 2.19 miles with citizen data from station 9DDD-1-NCNR in the 2010 assessment.

Dodd Creek (Lower): Length 3.78 miles.
9-DDD002.62- (Route 696 Bridge below Floyd STP) The 21°C Class V criterion exceeds in three of 21 measurements at 22.2°C on 8/10/2005; 21.6°C on 8/14/2006; and 21.7°C on 9/11/2007 within the 2010 data window. 2008 results report two of nine measurements at 22.2°C on 8/10/2005 and 21.6°C on 8/14/2006.

9-DDD001.00- (Route 8 Bridge below Floyd STP) The 2010 assessment finds the stockable trout water criterion exceeds in three of 21 measurements at 22.0 on 8/10/2005; 22.1°C on 8/14/2006; and 21.1°C on 9/11/2007. The 2008 IR found two of nine temperature measurements exceed the Class V criterion at 22.0 on 8/10/2005 and 22.1°C on 8/14/2006.

Dodd Creek (Upper) Length 4.69 miles.
9DDD-1-NCNR (Rt. 710 Bridge) Citizen Level 3 data reveals three of eight temperature measurements exceeding the Class V 21°C criterion at 25°C on 6/8/2008; 22.5°C on 8/10/2008; and 22.5°C on 9/14/2008. These data extend the temperature impairment upstream 2.19 miles.

Single measurement exceedances of the Class V criterion occur upstream in 2008 and 2010. There are no additional data reported for Station 9-DDD004.64 (Rt. 720 Bridge above Floyd STP) where one temperature exceedance from nine measurements is found at 22.4°C on 8/10/2005 within both the 2008 and 2010 data windows.

Historically stations 9-DDD006.27 (Rt. 8 Bridge), 9-DDD004.75 (Rt. 720 Bridge) and 9-DDD004.64 (Route 720 Bridge above Floyd STP) have recorded temperature excursions upstream albeit in drought conditions. 9-DDD006.27 21.6°C on 7/28/99 - One of two temperature measurements exceed the 21°C criterion. 9-DDD004.75 records one excursion at 21.9°C on 7/28/99. The extension of the impairment to the mouth of the West Fork of Dodd Creek is in recognition of these data and temperature exceedances on the West Fork of Dodd Creek.

9DDD-1-NCNR- (Citizen Lv. 3 ~ RM 8.20) Three of eight temperature measurements exceed the Class V criterion of 21°C at 25°C on 6/8/2008; 22.5°C on 8/10/2008; and 22.5°C on 9/14/2008. These data extend the temperature impairment upstream 2.19 miles.

Assessment Unit / Water Name / Description	Cause Category / Name	Nested	Cycle First Listed	TMDL Schedule or EPA Approval	Size
VAW-N20R_DDD01A00 / Dodd Creek / Dodd Creek mainstem waters from its mouth on the West Fork of Little River upstream to the Floyd/Floyd County PSA outfall on Dodd Creek.	5C Temperature, water		2008	2020	3.78

2010 Impaired Waters

Categories 4 and 5 by DCR Watershed*

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

New River Basin

Fact Sheet prepared for DCR Watershed: N20*

Assessment Unit / Water Name / Description	Cause	Category / Name	Nested	Cycle First Listed	TMDL Schedule or EPA Approval	Size
VAW-N20R_DDD02A00 / Dodd Creek / Dodd Creek mainstem waters from the Floyd/Floyd County PSA outfall on Dodd Creek upstream to the West Fork of Dodd Creek mouth on Dodd Creek, just upstream of the Rt. 8 Bridge.	5C	Temperature, water		2008	2020	2.50
VAW-N20R_DDD03A02 / Dodd Creek / Dodd Creek mainstem from the West Fork of Dodd Creek mouth on Dodd Creek, just upstream of the Rt. 8 Bridge on upstream near the junction of Routes 710 and 714 near the Blue Ridge Parkway.	5C	Temperature, water		2010	2020	2.19

Dodd Creek **DCR Watershed: N20***	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**8.47**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

*Header Information: Location, City/County, Cause/VA Category and Narratives; describe the entire extent of the Impairment. Sizes presented are for Assessment Units (AUs) lying within the DCR Watershed boundary noted above.

2010 Impaired Waters

Categories 4 and 5 by DCR Watershed*

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

New River Basin

Fact Sheet prepared for DCR Watershed: N20*

Cause Group Code: **N20R-01-TEMP** **West Fork Dodd Creek**

Location: West Fork Dodd Creek mainstem from its confluence with Dodd Creek upstream to the mouth of an unnamed tributary (XDC). The mouth of the unnamed tributary is located @36°52'33" / 80°19'43".

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Temperature, water/ 5C

9-DDW000.02 (Rt. 807 Bridge) Temperature exceedances within the 2010 data window are found in two of 12 measurements that occur on 7/18/2007 at 20.9°C and 9/11/2007 at 22.3°C. 2002 IR reports temperature exceeds the 20° natural trout criterion in two of two measurements. Exceeding values are 23.3°C on 7/28/99 and 20.1°C on 6/28/00. The 2002 Temperature 303(d) Listing remains.

Assessment Unit / Water Name / Description	Cause Category / Name	Nested	Cycle First Listed	TMDL Schedule or EPA Approval	Size
VAW-N20R_DDW01A02 / West Fork Dodd Creek / West Fork Dodd Creek mainstem from its confluence with Dodd Creek upstream to the mouth of an unnamed tributary (XDC). The mouth of the unnamed tributary is located @36°52'33" / 80°19'43".	5C Temperature, water		2002	2014	1.17

West Fork Dodd Creek **DCR Watershed: N20***	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			1.17

Sources:

Source Unknown

*Header Information: Location, City/County, Cause/VA Category and Narratives; describe the entire extent of the Impairment. Sizes presented are for Assessment Units (AUs) lying within the DCR Watershed boundary noted above.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

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Mailing address: P.O. Box 1105, Richmond, Virginia 23218
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www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

November 19, 2012

Mr. Greg Voigt
US EPA Region III TMDL Coordinator
USEPA REGION 3 – 3WP12
1650 Arch Street
Philadelphia, PA 19103-2029

RE: **Total Maximum Daily Load notification for a wasteload allocation change in the Bacteria, Benthic, and Temperature Total Maximum Daily Loads in the Little River Watershed of Floyd and Montgomery Counties, Virginia**

Dear Mr. Voigt,

The purpose of this letter is to notify EPA of a change within the TMDL WLA for a permitted facility expansion in the Little River watershed. The expansion will result in a change to the waste load allocation (WLA) for Floyd Waste Water Treatment Plant (VA0025992) and the eventual modification to the WLA tables in the Sediment TMDLs for the Little River watershed. EPA Region III approved the TMDLs addressing primary contact recreational and aquatic life use impairment 03/14/2012. This notification provides continuity between affected TMDL WLAs in the modified TMDL report.

The Floyd Waste Water Treatment Plant, VPDES VA0025992, has expanded their permitted discharge. The additional 0.1 MGD expansion (from 0.15 MGD to 0.25 MGD) will add 4.15 metric tons/year (or 4.57 tons/year) to the permit WLA. With this expansion, the new permit WLA will become 10.36 metric tons/year (or 11.42 tons/year). The permit expansion WLA is accommodated by the TMDL WLA future growth as originally modeled and presented in TMDL Table 11.3 for the Little River as 16.59 metric tons/year. Sufficient future growth is present in the modeled expanded WLA to accommodate this action. The existing future growth WLA when reduced by the expansion need, 4.15 metric tons/year, leaves 6.21 metric tons/year remaining in the Little River.

DEQ is providing public notice and a 30-day comment period on the TMDL revisions as part of the permit reissuance public notice and comment period. DEQ is submitting this change as a notification and will incorporate it in a future Little River TMDL modification.

Permit Details
The Floyd WWTP (VA0025992) is a VPDES permit which is set for permit modification issuance in December, 2012.

VADEQ hereby notifies EPA of the proposed changes within the Future Growth Waste Load Allocation. If you or your staff has any questions, please contact me at (804) 698-4240.

Sincerely,

R. Craig Lott
Watershed Programs

cc: Charles Lunsford, DCR
Sandra Mueller, DEQ
Mary Dail, BRRO-R TMDL Coordinator
Becky France, BRRO Permit Writer
File CO

2010 Impaired Waters

Categories 4 and 5 by Cause Group Code

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

New River Basin

Cause Group Code: **N20R-02-TEMP** **Dodd Creek**

Location: Dodd Creek from it's confluence with the West Fork Little River upstream to the mouth of the West Fork of Dodd Creek

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /
VA Category: Temperature, water/ 5C

The 2010 assessment finds the Aquatic Life Use is impaired for 8.47 miles due to temperature exceedances of these Class V (21°C) stockable trout waters criterion. The impairment is extended upstream 2.19 miles with citizen data from station 9DDD-1-NCNR in the 2010 assessment.

Dodd Creek (Lower): Length 3.78 miles.
9-DDD002.62- (Route 696 Bridge below Floyd STP) The 21°C Class V criterion exceeds in three of 21 measurements at 22.2°C on 8/10/2005; 21.6°C on 8/14/2006; and 21.7°C on 9/11/2007 within the 2010 data window. 2008 results report two of nine measurements at 22.2°C on 8/10/2005 and 21.6°C on 8/14/2006.

9-DDD001.00- (Route 8 Bridge below Floyd STP) The 2010 assessment finds the stockable trout water criterion exceeds in three of 21 measurements at 22.0 on 8/10/2005; 22.1°C on 8/14/2006; and 21.1°C on 9/11/2007. The 2008 IR found two of nine temperature measurements exceed the Class V criterion at 22.0 on 8/10/2005 and 22.1°C on 8/14/2006.

Dodd Creek (Upper) Length 4.69 miles.
9DDD-1-NCNR (Rt. 710 Bridge) Citizen Level 3 data reveals three of eight temperature measurements exceeding the Class V 21°C criterion at 25°C on 6/8/2008; 22.5°C on 8/10/2008; and 22.5°C on 9/14/2008. These data extend the temperature impairment upstream 2.19 miles.

Single measurement exceedances of the Class V criterion occur upstream in 2008 and 2010. There are no additional data reported for Station 9-DDD004.64 (Rt. 720 Bridge above Floyd STP) where one temperature exceedance from nine measurements is found at 22.4°C on 8/10/2005 within both the 2008 and 2010 data windows.

Historically stations 9-DDD006.27 (Rt. 8 Bridge), 9-DDD004.75 (Rt. 720 Bridge) and 9-DDD004.64 (Route 720 Bridge above Floyd STP) have recorded temperature excursions upstream albeit in drought conditions. 9-DDD006.27 21.6°C on 7/28/99 - One of two temperature measurements exceed the 21°C criterion. 9-DDD004.75 records one excursion at 21.9°C on 7/28/99. The extension of the impairment to the mouth of the West Fork of Dodd Creek is in recognition of these data and temperature exceedances on the West Fork of Dodd Creek.

9DDD-1-NCNR- (Citizen Lv. 3 ~ RM 8.20) Three of eight temperature measurements exceed the Class V criterion of 21°C at 25°C on 6/8/2008; 22.5°C on 8/10/2008; and 22.5°C on 9/14/2008. These data extend the temperature impairment upstream 2.19 miles.

Assessment Unit / Water Name / Description	Cause Category / Name	Nested	Cycle First Listed	TMDL Schedule or EPA Approval	Size
VAW-N20R_DDD01A00 / Dodd Creek / Dodd Creek mainstem waters from its mouth on the West Fork of Little River upstream to the Floyd/Floyd County PSA outfall on Dodd Creek.	5C Temperature, water		2008	2020	3.78

2010 Impaired Waters

Categories 4 and 5 by Cause Group Code

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

New River Basin

Assessment Unit / Water Name / Description	Cause Category / Name	Nested	Cycle First Listed	TMDL Schedule or EPA Approval	Size
VAW-N20R_DDD02A00 / Dodd Creek / Dodd Creek mainstem waters from the Floyd/Floyd County PSA outfall on Dodd Creek upstream to the West Fork of Dodd Creek mouth on Dodd Creek, just upstream of the Rt. 8 Bridge.	5C Temperature, water		2008	2020	2.50
VAW-N20R_DDD03A02 / Dodd Creek / Dodd Creek mainstem from the West Fork of Dodd Creek mouth on Dodd Creek, just upstream of the Rt. 8 Bridge on upstream near the junction of Routes 710 and 714 near the Blue Ridge Parkway.	5C Temperature, water		2010	2020	2.19

Dodd Creek **Aquatic Life**	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Temperature, water - Total Impaired Size by Water Type:			**8.47**

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed	Source Unknown

MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
West Central Regional Office

3019 Peters Creek Rd. Roanoke, VA 24019

SUBJECT: Dodd Creek TMDL Study, Floyd County

TO: Lynn Wise, Mike Mcleod

FROM: Jason Hill, Greg Anderson

DATE: April 16, 2003

COPIES: Jutta Schneider, Charlie Martin, Jon VanSoestbergen, Kip Foster

This memo discusses how the Waste Load Allocation (WLA) was calculated for the Floyd Sewage Treatment Plant in the *Fecal Coliform TMDL for Dodd Creek Watershed*. This was the only point source allocated for the Dodd Creek TMDL.

Existing (WQ Standard = Geomean Fecal Coliform 200 cfu/100 ml)

Annual Waste Load Allocation (WLA) = 4.15 E+11 (*Fecal Coliform TMDL for Dodd Creek Watershed*, Page 5-6)

This WLA was calculated using the max existing design flow (150,000) gallons a day using the equation below:

WLA = CFS (of permitted facility) * Permitted Limit * (28317/100) * 60 * 60 *24) *365

WLA = 0.232 cfs * 200 cfu * 283.17 * 86400 * 365

WLA = 4.15 E+11

Conversions:

1 MGD = 1.547 cfs , 1 CFS = 28317 mL

Revised Total Fecal Coliform and E. Coli (WQ Standard = Geomean E. coli 126 cfu/100 ml)

To meet the WLA set forth in the Dodd Creek TMDL with Floyd STP proposed max design flow of (250,000) gallons a day:

WLA = CFS (of permitted facility – Floyd STP) * Permitted Limit * (28316/100) * 60 * 60 *24) *365

4.15 E+11 = 0.38675 * X cfu * 283.17 * 86400 * 365

4.15 E+11 = 3.45 E+9 * X cfu

X = 120 cfu (Total Fecal Coliform)

Fecal Coliform → E. Coli Conversion:

The following formula is used to translate in-stream Fecal Coliform to E. Coli concentration:

Log 2 EC = -0.0172 + 0.91905 * Log 2 FC

In Excel the equation is solved by entering: =2^(-0.0172 + (0.91905 * LOG(FC,2)))

Note: replace FC with actual number.

The geomean of E. Coli to meet WLA in TMDL is 80 cfu/100 mL.

copy - C Martin

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

AEI CM

AUG 18 2003

Mr. Larry Lawson, Director
Water Program Coordination
Virginia Department of Environmental Quality
629 Main Street
Richmond, VA 23219

Dear Larry Lawson:

The Environmental Protection Agency (EPA) Region III is pleased to approve the modification to the fecal coliform Total Maximum Daily Load (TMDL) for Dodd Creek. The TMDL was re-modeled to insure that an expansion to the Floyd Sewage Treatment Plant would still allow for the attainment of water quality criteria. After completing the re-modeling the Virginia Department of Environmental Quality (VADEQ) noticed the modifications for public comment. On July 21, 2002 VADEQ notified EPA of the modifications being made to the TMDL.

In accordance with Federal regulations at 40 CFR §130.7, a TMDL must comply with the following requirements: (1) designed to attain and maintain the applicable water quality standards, (2) include a total allowable loading and as appropriate, wasteload allocations (WLAs) for point sources and load allocations for nonpoint sources, (3) consider the impacts of background pollutant contributions, (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated), (5) consider seasonal variations, (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality), (7) consider reasonable assurance that the TMDL can be met, and (8) be subject to public participation. The TMDL for Dodd Creek and the modification to that TMDL satisfy each of these requirements.

As you know, all new or revised National Pollutant Discharge Elimination System permits must be consistent with the TMDL WLA pursuant to 40 CFR §122.44 (d)(1)(vii)(B). Please submit all such permits to EPA for review as per EPA's letter dated October 1, 1998. If you have any questions or comments concerning this letter, please don't hesitate to contact Mr. Thomas Henry at (215) 814-5752.

Sincerely,

Jon M. Capacasa, Director
Water Protection Division

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

W. Tayloe Murphy, Jr.
Secretary of Natural Resources

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Robert G. Burnley
Director

(804) 698-4000
1-800-592-5482

May 15, 2003

Mr. Jon Capacasa, Director
Water Protection Division
US EPA Region 3 - 3WPOO
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Dear Mr. Capacasa:

In December, 2002, EPA Region III approved the "Fecal Coliform TMDL for Dodd Creek Watershed, Virginia". The Floyd County Sewage Treatment Plant (STP) is the only permitted point source discharge in the watershed. As part of the current reissuance of the VPDES permit, the Floyd County treatment facility requested an expansion of the design flow from 0.150 mgd to 0.250 mgd at a fecal coliform concentration of 200 cfu/100 ml.

Louis Berger, the Dodd Creek TMDL contractor, has re-modeled this TMDL using the proposed 0.250 mgd design flow. This increase in the discharge has an insignificant impact on the original allocations and requires no changes in the bacteria reductions. The memorandum summarizing the re-modeling results is attached.

This letter is to inform you that we will make the following modifications to the Dodd CreekTMDL to reflect the proposed expansion:

- change the design flow of the Floyd County STP from 0.125 mgd to 0.250 mgd and
- replace the TMDL equation as approved by EPA and shown in Table 5.5 of the report with the TMDL equation shown in Table 1 below.

Table 1: Dodd Creek Bacteria TMDL Loads With Expanded STP WLA (cfu/year)

Point Source (WLA)	Nonpoint Source (LA)	Margin of Safety (MOS)	TMDL
6.91E+11	3.37E+14	3.73E+12	3.414E+14

If you or your staff have questions on this modification of the Dodd creek TMDL, please contact me or Mr. Charles Martin at (804) 698-4462.

Sincerely,

Larry G. Lawson, P.E.
Director, Division of Water Coordination

Enclosure

cc: Thomas Henry, EPA
Mark Smith, EPA
Steve Dietrich, VADEQ
Jon Van Soestbergen, VADEQ
Alan Pollock, VADEQ

COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY
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Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

(804) 698-4000
1-800-592-5482

December 6, 2012

Mr. Greg Voigt
US EPA Region III TMDL Coordinator
USEPA REGION 3 – 3WP12
1650 Arch Street
Philadelphia, PA 19103-2029

RE: **Total Maximum Daily Load notification for a wasteload allocation change in the Bacteria, Benthic, and Temperature Total Maximum Daily Loads in the Little River Watershed of Floyd and Montgomery Counties, Virginia**

Dear Mr. Voigt,

The purpose of this letter is to notify EPA of a change within the TMDL WLA for a permitted facility expansion in the Little River watershed. The expansion will result in a change to the waste load allocation (WLA) for Floyd Waste Water Treatment Plant (VA0025992) and the eventual modification to the WLA tables in the Sediment TMDLs for the Little River watershed. EPA Region III approved the TMDLs addressing primary contact recreational and aquatic life use impairment 03/14/2012. This notification provides continuity between affected TMDL WLAs in the modified TMDL report.

The Floyd Waste Water Treatment Plant, VPDES VA0025992, proposes an expansion of their permitted discharge. The additional 0.1 MGD expansion (from 0.15 MGD to 0.25 MGD) will add 4.15 metric tons/year (or 4.57 tons/year) to the permit WLA. With this expansion, the new permit WLA will become 10.36 metric tons/year (or 11.42 tons/year). The permit expansion WLA is accommodated by the TMDL WLA future growth as originally modeled and presented in TMDL Table 11.3 for the Little River as 16.59 metric tons/year. Sufficient future growth is present in the modeled expanded WLA to accommodate this action. The existing future growth WLA when reduced by the expansion need, 4.15 metric tons/year, leaves 12.43 metric tons/year remaining in the Little River.

DEQ provided a public notice and a 30-day comment period on the TMDL revisions as part of the permit reissuance public notice and comment period. No comments on the TMDL modification were received. DEQ is submitting this change as a notification and will incorporate it in a future Little River TMDL modification.

Permit Details
The Floyd WWTP (VA0025992) is a VPDES permit which is set for permit modification issuance prior to December 15, 2012.

VADEQ hereby notifies EPA of the proposed changes within the Future Growth Waste Load Allocation. If you or your staff has any questions, please contact me at (804) 698-4240.

Sincerely,

R. Craig Lott

R. Craig Lott
Watershed Programs

cc: Charles Lunsford, DCR
Sandra Mueller, DEQ
Mary Dail, BRRO-R TMDL Coordinator
Becky France, BRRO Permit Writer
File CO

Bacteria, Benthic, and Temperature Total Maximum Daily Loads in the Little River Watershed of Floyd and Montgomery Counties, Virginia

(A Nested TMDL Approach)

Prepared for: Virginia's Department of Environmental Quality
Date Submitted: August, 2011
Date Resubmitted: December, 2011
Contract #: 14652
Prepared by MapTech, Inc. for New River Highlands.
Submitted to VADEQ by New River Highlands.

New River Highlands RC&D

MapTech, Inc.
3154 State Street
Blacksburg, VA 24060

New River Highlands RC&D
100 USDA Drive, Suite F
Wytheville, VA 24382

7. BENTHIC MACROINVERTEBRATE COMMUNITY TMDL ENDPOINT: STRESSOR IDENTIFICATION – LITTLE RIVER

7.1 Stressor Identification – Little River

The Little River begins in northeastern Floyd County and flows in a westerly direction to its confluence with the New River at the Montgomery/Pulaski counties line. Three fourths of the watershed lies within Floyd County with 17% in Montgomery County and 8% in Pulaski County. There are two segments impaired for the Aquatic Life Use on the mainstem of the Little River. (The first (VAW-N21R_LRV07A00) begins at Little River's confluence with the West Fork Little River and continues downstream to the end of the natural trout waters designation at the end of Rt 706 for a total of 3.66 stream miles. The second one (VAW-N21R_LRV06A04), begins near the end of Rt 706 and continues downstream to the Little River/Sidney Creek confluence for a total of 13.33 stream miles.)

TMDLs must be developed for a specific pollutant(s). Biological monitoring assessments are very good at determining if a particular stream segment is impaired or not, but they usually do not provide enough information to determine the cause(s) of the impairment when organisms are not classified beyond the family level. The process outlined in the Stressor Identification Guidance Document (EPA, 2000) was used to separately identify the most probable stressor(s) for Little River. A list of candidate causes was developed from published literature and VADEQ staff input. Chemical and physical monitoring data provided evidence to support or eliminate potential stressors. Individual metrics for the biological and habitat evaluation were used to determine if there were links to a specific stressor(s). Land use data as well as a visual assessment of conditions along the stream provided additional information to eliminate or support candidate stressors. The potential stressors are: sediment, toxics, low dissolved oxygen, nutrients, pH, metals, temperature, and organic matter.

The results of the stressor analysis for Little River are divided into three categories:

> **Non-Stressor(s)**: Those stressors with data indicating normal conditions, without water quality standard violations, or without the observable impacts usually

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Ms. Melanie Davenport, Director
Division of Water Quality Programs
Virginia Department of Environmental Quality
629 E. Main Street
P.O. Box 1105
Richmond, Virginia 23218

MAR 14 2012

Dear Ms. Melanie Davenport:

The U.S. Environmental Protection Agency (EPA), Region III, is pleased to approve the Total Maximum Daily Load (TMDL) addressing bacteria, benthic and temperature impairments in the Little River watershed, located in Floyd, Montgomery and Pulaski Counties, Virginia. The TMDL report was submitted to EPA for review on February 2, 2012. The TMDL was established and submitted in accordance with Sections 303(d)(1)(c) and (2) of the Clean Water Act to address impairments of water quality as identified in Virginia's Section 303(d) List.

In accordance with Federal regulations at 40 CFR §130.7, a TMDL must comply with the following requirements: (1) be designed to attain and maintain the applicable water quality standards; (2) include a total allowable loading and, as appropriate, wasteload allocations for point sources and load allocations for nonpoint sources; (3) consider the impacts of background pollutant contributions; (4) take critical stream conditions into account (the conditions when water quality is most likely to be violated); (5) consider seasonal variations; (6) include a margin of safety (which accounts for uncertainties in the relationship between pollutant loads and instream water quality); and (7) be subject to public participation. The *E. coli*, sediment and temperature TMDLs for the Little River watershed satisfy each of these requirements. In addition, the TMDLs considered reasonable assurance that the allocations assigned to nonpoint sources can be reasonably met. A copy of EPA's Rationale for approval of these TMDLs is included with this letter.

As you know, all new or revised National Pollutant Discharge Elimination System permits must be consistent with the TMDL wasteload allocations pursuant to 40 CFR §122.44 (d)(1)(vii)(B). Please submit all such permits to EPA for review as per EPA's letter dated September 29, 1998.

MAR 19 2012

If you have any questions please call me, or have your staff contact Greg Voigt, Virginia TMDL coordinator, at 215-814-5737.

Sincerely,

Jon M. Capacasa, Director
Water Protection Division

Enclosure

cc: David Lazarus, VADEQ

THE Louis Berger Group, INC.
1819 H Street, NW, Washington, DC 20006 USA
Tel 202 331 7775 Fax 202 293 0787 www.louisberger.com

Memorandum

DATE: 5/5/2003

TO: David Lazarus

FROM: Raed EL-Farhan RME

SUBJECT: Dodd Creek TMDL and Floyd STP Proposed Design Expansion

As requested by DEQ, Berger evaluated the impacts of Floyd STP expansion on the Dodd Creek TMDL. The proposed design flow is to be increased from 0.15 to 0.25 MGD.

Berger developed the HSPF model used for the Dodd Creek Fecal Coliform TMDL. It was submitted to the Commonwealth of Virginia and approved by EPA Region 4. The HSPF model input files were modified to reflect the increased Floyd STP flow and loading to Dodd Creek. The model was run for the same time period used in the TMDL development. The simulation for the period from 1/1/1995 to 12/31/2000 showed that there are no violations of the fecal coliform water quality standard. However, one marginal exceedance of 190 (actual value is 190.15 counts/100 mL - GM) occurred on 8/16/1998. We rounded it off 190 counts/100 ml.

The overall impact on the Dodd Creek fecal coliform TMDL are presented in the Table below. This would replace Table 5-5 in the Dodd Creek TMDL document if the proposed expansion will proceed.

Table 1: Dodd Creek TMDL Allocation Plan Loads (cfu/year) for Existing and Proposed Floyd STP Expansion

Condition	Point Sources (WLA)	Nonpoint sources (LA)	Margin of safety (MOS)	TMDL
Existing Floyd STP Flow of 0.15 MGD	4.16E+11	3.37E+14	3.73E+12	3.412E+14
Proposed Floyd STP expansion to a Flow of 0.25 MGD	6.91E+11	3.37E+14	3.73E+12	3.414E+14

Please do not hesitate to call me if you have any questions or comments regarding this issue.

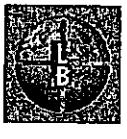
Fecal Coliform TMDL for Dodd Creek Watershed, Virginia

Submitted by

Virginia Department of Environmental Quality

Virginia Department of Conservation and Recreation

Prepared by



THE Louis Berger Group, INC.
1819 H Street, NW, Suite 900
Washington, DC 20006

November 20, 2002

Draft Report submitted July 2002

11.2 Future Growth Considerations

The land use in the Little River watershed is not expected to change significantly in the next 25 years. The Little River watershed is mostly rural with the exception of the Town of Floyd and it is assumed that residential and commercial growth in the watershed will not have considerable impact on future sediment loads.

A sediment load value for future growth was determined as 1% of the total TMDL. This was incorporated into the WLA for use as current discharges expand and for future permits that may discharge sediment.

11.3 Sediment TMDL

The target TMDL load for Little River is the average annual load in metric tons per year (t/yr) from the area-adjusted Big Reed Island Creek watershed under existing conditions. To reach the TMDL target load, three different scenarios were run (Table 11.1). Sediment loads from straight pipes were reduced 100% in all scenarios due to health implications and the requirements of the fecal bacteria TMDL. Scenario 1 shows similar reductions to sediment loads from barren lands, conventional tillage, unimproved pasture, disturbed forest, and streambank erosion. Scenario 2 shows reductions to loads only from straight pipes and streambank erosion. Scenario 3 shows reductions to loads from streambank erosion and unimproved pasture. All three scenarios meet the TMDL goal at a total sediment load reduction of 12.18%. Scenario 1 was chosen to use for the final TMDL because it has reasonable reductions on all types of land uses.

Executive Summary

This report presents the development of a Fecal Coliform TMDL for the Dodd Creek watershed. Dodd Creek is a tributary of the West Fork Little River as part of the New River Basin. The Dodd Creek watershed is approximately 14,442 acres or 22.57 square miles. The watershed is located in the south central section of Floyd County and makes up about 6 percent of the county's land area. State Highway 8 (SH-8) runs through the central section of the watershed in a north to south direction. U.S. Highway 221 (US-221) runs through the northern section of the watershed in a northeast to southwest direction. The two highways intersect at the Town of Floyd.

Dodd Creek was listed as impaired on Virginia's 1998 303(d) Total Maximum Daily Load Priority List and Report (DEQ, 1998) because of violations of the fecal coliform bacteria water quality standard. Virginia's Water Quality Standards, Section 9 VAC 25-260-170, states that fecal coliform bacteria shall not exceed a geometric mean of 200 fecal coliform bacteria per 100 ml of water for two or more samples over a 30-period day, or a fecal coliform bacteria level of 1000 per 100 ml at anytime. The Dodd Creek watershed has 15.41 miles of impaired stream segments. The segment begins at the junction of Rt. 710 and Rt. 714 and continues downstream to the mouth of Dodd Creek on the West Fork Little River.) In addition, the listed segment also includes West Fork Dodd Creek. This portion of the segment begins at the West Fork Dodd Creek headwaters near the Blue Ridge Parkway and continues downstream to the West Fork confluence with Dodd Creek.

Land use characterization was based on data provided by DCR for the Dodd Creek watershed. DCR developed this digital land use/land cover data using satellite images or digital ortho quarter quads (DOQQ) and extensive ground truthing. The dominant land uses in the Dodd Creek watershed are forest and pasture land. Forest accounts for 55% of the watershed while the improved pasture accounts for 42% of the watershed land area. When combined, these two land uses account for 97% of the land area of the watershed.

Typically, there are several potential allocation strategies that would achieve the TMDL endpoint and water quality standards. A number of load allocation scenarios were developed to determine the final TMDL load allocation scenario.

For the hydrologic period from January 1995 to December 2000, the fecal coliform loading and the instream fecal coliform concentrations were estimated for the various scenarios using the developed HSPF model of the Dodd Creek watershed. Based on load allocation scenario analysis, a TMDL allocation plan to meet the 30-day geometric mean water quality standard goal of 190 cfu/100 ml requires:

- 100 percent reduction of human sources of fecal coliform from failed septic systems and straight pipes;
- 100 percent reduction of the direct instream fecal coliform loading from livestock; and
- 63 percent reduction of the fecal coliform loading from wildlife.

A summary of the fecal coliform TMDL allocation plan loads for Dodd Creek is presented in Table E-1.

Table E-1: Dodd Creek TMDL Allocation Plan Loads (cfu/year)

Point Sources (WLA)	Nonpoint Sources (LA)	Margin of Safety (MOS)	TMDL
4.16E+11	3.37E+14	3.73E+12	3.41E+14

The Commonwealth intends for this TMDL to be implemented through best management practices (BMPs) in the watershed. Implementation will occur in stages. The benefits of staged implementation are: 1) as stream monitoring continues to occur, it allows for water quality improvements to be recorded as they are being achieved; 2) it provides a measure of quality control, given the uncertainties that exist in any model; 3) it provides a mechanism for developing public support; 4) it helps to ensure the most cost effective practices are implemented initially, and 5) it allows for the evaluation of the TMDL's adequacy in achieving the water quality standard.

Table 10.2 Permitted Sources in the Little River watershed.

Permit Number	Permit Name	Permit Type	Design Flow (Million Gallons Per Day)	Sediment (t/yr)
--	Average annual construction load	Construction	--	3.72
VA0025992	Floyd Town - Floyd Co - Public Service Authority	VPDES	0.15	6.22
VA0025992	Floyd Town - Floyd Co - Public Service Authority	VPDES	0.40	16.59
VAG402042	Private Residence	Domestic	0.0045	0.04
VAG402018	Private Residence	Domestic	0.0015	0.04
VAG402051	Country Store of Check	Domestic	0.001	0.04
Total				*26.65*

10.2.3 Selection of Representative Modeling Period - GWLF

An analysis of historic precipitation and streamflow in Little River was preformed to select a representative time frame. The time period chosen was water year 2006 through water year 2008.

10.3 GWLF Sensitivity Analyses

Sensitivity analyses were conducted to assess the sensitivity of the model to changes in hydrologic and water quality parameters as well as to assess the impact of unknown variability in source allocation (*e.g.*, seasonal and spatial variability of land disturbance, runoff curve number, etc.). Sensitivity analyses were run on the runoff curve number (CN), the combined erosion factor (KLSCP) that combines the effects of soil erodibility, land slope, land cover, and management practices, the recession coefficient, the seepage coefficient, the unsaturated available water capacity (AWC), and the Evapotranspiration (ET) Coefficient (Table 10.3).

Table 11.2 Required sediment reductions for Little River.

Load Summary	Little River (t/yr)	Reductions Required	
		(t/yr)	(% of existing load)
Existing Sediment Load	9,299.32		
Target Modeling Load (LA+WLA)	8,166.83	1132.49	12.18%

The sediment TMDL for Little River includes three components – WLA, LA, and the 10% MOS. The WLA was calculated as the sum of all permitted point source discharges. The LA was calculated as the target TMDL load minus the WLA load minus the MOS (Table 11.3).

Table 11.3 Average annual sediment TMDL for Little River.

Impairment	Permit Name	WLA t/yr	LA t/yr	MOS t/yr	TMDL t/yr
Little River		**116.49**	**8,050.34**	**907.46**	**9,074.29**
--	Average annual construction permits	3.72			
VA0025992	Floyd Town - Floyd Co - Public Service Authority	6.22			
VA0025992	Floyd Town - Floyd Co - Public Service Authority	16.59			
VAG402042	Private Residence	0.04			
VAG402018	Private Residence	0.04			
VAG402051	Country Store of Check	0.04			
Future Growth		*89.84*			

* WLA is expressed as the summation of all individual permit loads.

Starting in 2007, the USEPA has mandated that TMDL studies include a maximum "daily" load (MDL) as well as the average annual load previously shown. The approach to developing a daily maximum load was similar to the USEPA approved approach found in the 2007 document titled Options for Expressing Daily Loads in TMDLs (USEPA, 2007). The procedure involved calculating the MDL from the long-term average annual TMDL load in addition to a coefficient of variation (VC) estimated from the annual load for ten years. The annual sediment load ranged from 4,583 t to 24,737 t with a coefficient of variation (CV) of 0.48. A multiplier was used to estimate the MDL from the long-term average based on the USEPA guidance. The multiplier estimated for the

Attachment F

Effluent Data

PROCHEM Analytical Incorporated

HCW

Final Report

PCA Order No.: 416911
Client: Floyd County Public Service Authority
Project:

Report Date: 12/18/2007

Sample Number: 416911-01
Date Collected: 12/11/2007
Time Collected: 08:00

Description: Upstream of Dodd Creek
Matrix: Surface Water
Sample Type: Grab

Analysis	Result	Reporting Limit	Units	Date Analyzed	Time Analyzed	Analyst	Method
Hardness as CaCO3	34	5	mg/L	12/13/2007	13:00	KNB	SM 2340C

Sample Number: 416911-02
Date Collected: 12/11/2007
Time Collected: 08:00

Description: Outfall
Matrix: Surface Water
Sample Type: Grab

Analysis	Result	Reporting Limit	Units	Date Analyzed	Time Analyzed	Analyst	Method
Hardness as CaCO3	109	5	mg/L	12/13/2007	13:00	KNB	SM 2340C

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DEC 28 2007
DEQ-WCRO

Floyd - Floyd County PSA WWTP
(Outfall 001)

Effluent pH

DMR Due Date	S.U.	
	min	max
10-Oct-08	6.25	7.36
10-Nov-08	6.4	7.13
10-Dec-08	6.2	7.3
10-Jan-09	6.14	7.21
10-Feb-09	6.37	7.61
10-Mar-09	6.34	7.11
10-Apr-09	6.41	7.11
10-May-09	6.44	7.14
10-Jun-09	6.19	7.17
10-Jul-09	6.33	7.46
10-Aug-09	6.25	7.19
10-Sep-09	6.23	7.44
10-Oct-09	6.31	7.08
10-Nov-09	6.29	7.49
10-Dec-09	6.81	7.42
10-Jan-10	6.62	7.18
10-Feb-10	6.34	7.31
10-Mar-10	6.5	7.5
10-Apr-10	6.24	7.32
10-May-10	6.47	7.1
10-Jun-10	6.29	7.1
10-Jul-10	6.41	7.1
10-Aug-10	6.7	7.21
10-Sep-10	6.47	7.12
10-Oct-10	6.33	7.33
10-Nov-10	6.46	7.19
10-Dec-10	6.71	7.6
10-Jan-11	6.89	8.12
10-Feb-11	6.61	7.81
10-Mar-11	6.2	7.69
10-Apr-11	6.67	7.81
10-May-11	6.67	7.95
10-Jun-11	6.9	7.83
10-Jul-11	6.78	7.71
10-Aug-11	6.43	7.4
10-Sep-11	6.61	7.31
10-Oct-11	6.67	7.71
10-Nov-11	6.71	7.68
10-Dec-11	6.9	7.29
10-Jan-12	6.58	7.41
10-Feb-12	6.88	7.6
10-Mar-12	6.57	7.19
10-Apr-12	6.5	7.3
10-May-12	6.26	7.51
10-Jun-12	6.6	7.52
10-Jul-12	6.6	7.37
10-Aug-12	6.38	7.06
10-Sep-12	6.31	7.07

90th Percentile pH	7.74 S.U.
10th Percentile pH	6.29 S.U.

Floyd -Floyd County PSA WWTP
(Outfall 001)

Effluent Temperature

DMR Due Date	°C
10-Oct-08	23.1
10-Nov-08	20.2
10-Dec-08	21.1
10-Jan-09	21.1
10-Feb-09	12.5
10-Mar-09	10.7
10-Apr-09	12.9
10-May-09	16.4
10-Jun-09	18.9
10-Jul-09	22
10-Aug-09	23.1
10-Sep-09	24
10-Oct-09	22.5
10-Nov-09	19.9
10-Dec-09	16.4
10-Jan-10	13.7
10-Feb-10	10.3
10-Mar-10	8.3
10-Apr-10	10.8
10-May-10	15.4
10-Jun-10	19.8
10-Jul-10	22.4
10-Aug-10	24.9
10-Sep-10	27.7
10-Oct-10	23.7
10-Nov-10	21
10-Dec-10	17
10-Jan-11	12.9
10-Feb-11	10.5
10-Mar-11	11.8
10-Apr-11	12.8
10-May-11	16.1
10-Jun-11	19.3
10-Jul-11	22.5
10-Aug-11	25.6
10-Sep-11	24.4
10-Oct-11	23.6
10-Nov-11	21.5
10-Dec-11	16.6
10-Jan-12	20.9
10-Feb-12	11.8
10-Mar-12	11.8
10-Apr-12	15.1
10-May-12	16.5
10-Jun-12	19.6
10-Jul-12	24.5
10-Aug-12	24.4
10-Sep-12	24.3

90th Percentile Temp	24.4 °C	
90th Percentile Temp	19.3 °C	(Jan. - May)

Floyd-Floyd County PSA WWTP
VPDES Permit No. VA0025992
(Outfall 001)

Date Due	Flow (MGD)	Ammonia (mg/L)		Cu (ug/L)	$cBOD_5$ (mg/L)		DO (mg/L)	E. coli (N/CML)	TSS (mg/L)	
	Average	Average	Maximum	Average	Average	Maximum	Minimum	Average	Average	Maximum
10-Oct-08	0.095	8.97	23.3	11.1	22	39.7	5.23	112	18.8	28.7
10-Nov-08	0.088	2.37	17.2	7	18.1	18.3	6.08	293	14.3	14.5
10-Dec-08	0.081	2.25	8.04	9.9	15.1	20.5	6.89	125	14	16.5
10-Jan-09	0.1	0.31	0.83	10.8	12.9	15.7	7.66	113	12.9	15.7
10-Feb-09	0.106	0.42	0.72	6.5	10.1	11.4	6.92	19	12.6	15.4
10-Mar-09	0.091	1.07	2.18	10.7	11.15	13.4	8.2	42	11	11.8
10-Apr-09	0.117	1.96	3.35	7.2	13.9	17.2	7.11	102	13.8	17.1
10-May-09	0.119	1.51	5.27	10.5	13	18.1	7.2	0	19.8	20.8
10-Jun-09	0.139	2.04	7.44	9.6	9.8	13	6.64	7	11.7	13
10-Jul-09	0.139	0.73	1.56	10.3	11.21	12.3	6.06	14	14.58	15.1
10-Aug-09	0.101	0.83	2.32	9.6	9.29	11.8	5.85	9	13	22.8
10-Sep-09	0.099	0.96	1.89	9.6	10.9	15.2	5.18	11	16.67	21.2
10-Oct-09	0.11	5.14	14.6	15.9	13.9	18	5.35	11.6	15.1	21.4
10-Nov-09	0.101	2.15	9.4	13.7	13.36	14.5	5.21	4	11.9	12.8
10-Dec-09	0.159	0.56	2.87	13.4	14.6	18.3	6.35	561	17.7	21.73
10-Jan-10	0.198	0.21	0.73	13	12.4	14.6	7.71	15	14.2	15.7
10-Feb-10	0.195	1.59	6.17	9.9	15.8	19	8.79	6	15.1	16.3
10-Mar-10	0.16	0.42	1.2	10.4	14.25	16.6	9.31	126	15	16.9
10-Apr-10	0.213	0.88	0.45	7.9	10.5	15.1	9.2	3	10.2	12.4
10-May-10	0.151	0.42	0.61	8.7	5.3	10.8	7.92	2	10.6	10.9
10-Jun-10	0.131	0.44	1.51	11.7	12.3	13.7	5.49	2	12.16	14.66
10-Jul-10	0.105	0.6	1.18	10.3	8.9	14.7	4.97	7	10.3	12.1
10-Aug-10	0.101	0.82	1.1	14.1	7.94	4.4	5.3	429	9.7	12.6
10-Sep-10	0.113	0.73	1.84	10.4	8.7	10.9	5.21	24	14.1	19.5
10-Oct-10	0.115	0.81	1.98	18.2	12.8	18.7	5.02	85	15.1	19.2
10-Nov-10	0.11	0.53	0.88	14.7	12	13.1	4.19	1.5	13.6	13.8
10-Dec-10	0.091	0.31	0.55	13.2	11.03	10.9	6.91	3	11.61	11.4
10-Jan-11	0.118	0.23	0.67	7.7	10.2	11.8	8.19	16	13.1	13.7
10-Feb-11	0.099	0.24	0.39	11	14.4	15.7	8.36	1	14.6	16
10-Mar-11	0.105	0.37	0.7	13.4	14.3	16.8	9.01	2	15	16.8
10-Apr-11	0.173	0.32	0.5	11.1	7.1	13.9	8.55	1	14.6	15.3
10-May-11	0.176	0.48	0.6	11.6	13.6	15.8	7.97	6.5	17.1	21.5
10-Jun-11	0.179	0.38	0.86	10.6	14.8	32	7.49	4	17.3	18.4
10-Jul-11	0.109	0.85	4.9	12.3	8.79	9.3	6.11	18.5	16.5	25
10-Aug-11	0.098	0.48	0.65	10.2	9.67	10.9	5.79	68	8.98	10.5
10-Sep-11	0.091	0.67	1.3	10.8	10	11.7	5.35	16.5	14	19.3
10-Oct-11	0.117	0.58	1.05	8.1	15.3	16.8	5.76	87.5	13.7	17.7
10-Nov-11	0.104	0.39	0.63	9.4	12.3	15.9	6.49	21	15	12.9
10-Dec-11	0.127	0.28	1.04	9	10.8	10.9	6.69	29	11.9	11.9
10-Jan-12	0.161	0.47	1.8	10.8	13.8	17.3	5.92	27	17.8	41.5
10-Feb-12	0.127	0.28	0.53	12.4	12	12.7	8.65	16	12.4	14.4
10-Mar-12	0.118	0.55	2.16	12.2	12.4	13.8	8.63	8.5	12.6	12.9
10-Apr-12	0.135	0.42	0.51	15.4	11.4	12.3	4.03	20	14.8	16.2
10-May-12	0.147	1.44	11.7	19.6	14.8	17.4	5.03	12.5	18	17.6
10-Jun-12	0.157	0.3	0.55	39.1	11.8	13.8	6.68	100	15.4	16
10-Jul-12	0.119	1	1.62	15.3	13.3	15.9	5	459	16.8	28.6
10-Aug-12	0.101	0.9	2.28	9.2	11.33	14.13	3.12	205	7.52	9.73
10-Sep-12	0.099	1.26	5.1	16.5	12.21	13.7	3.21	15	12.6	15.57

PROCHEM
Analytical Incorporated

Final Report

PCA Order No.: 417534
Report Date: 2/18/2008
Client: Floyd County Public Service Authority
Project:

Sample Number: 417534-01
Description: 001 Effluent
Date Collected: 1/29/2008
Matrix: Wastewater
Time Collected: 10:32
Sample Type: Grab

Analysis	Result	Reporting Limit	Units	Date Analyzed	Time Analyzed	Analyst	Method
Mercury, Dissolved	< 0.0002	0.0002	mg/L	2/15/2008	11:18	KNB	EPA 245.2
Chemical Oxygen Demand	129	20	mg/L	2/6/2008	08:00	ASB	EPA 410.4
Hexavalent Chromium	< 0.002	0.002	mg/L	1/30/2008	07:00	ASB	ASTM D1687
Antimony, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Arsenic, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Cadmium, Dissolved	< 0.001	0.001	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Chromium	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Copper, Dissolved	0.012	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Lead, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Nickel, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Selenium, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Silver, Dissolved	< 0.002	0.002	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Zinc, Dissolved	0.060	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7

Floyd-Floyd County PSA
VA 0025992

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[10]	REPORTING RESULTS	SAMPLE TYPE[21]	SAMPLE FREQUENCY
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05	<0.050	G or SC	1/5 YR
57-74-9	Chlordane	608	0.2	<0.50	G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)	<0.50	G or SC	1/5 YR
72-54-8	DDD	608	0.1	<0.050	G or SC	1/5 YR
72-55-9	DDE	608	0.1	<0.050	G or SC	1/5 YR
50-29-3	DDT	608	0.1	<0.050	G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)	<0.050	G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1	<0.050	G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1	<0.050	G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1	<0.050	G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1	<0.050	G or SC	1/5 YR
72-20-8	Endrin	608	0.1	<0.050	G or SC	1/5 YR
7421-93-4	Endrin Aldehyde	(4)	(5)	<0.050	G or SC	1/5 YR
86-50-0	Guthion	622	(5)	<0.50	G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05	<0.050	G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)	<0.050	G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)	<0.050	G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)	<0.050	G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)	<0.050	G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)	< 21.6	G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)	<0.50	G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)	<0.011	G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)	<0.011	G or SC	1/5 YR
56-38-2	Parathion <1.0	(4)	(5)	<0.50	G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0	<0.50	G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0	<0.50	G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0	<0.50	G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0	<0.50	G or SC	1/5 YR

Floyd-Floyd County PSA
VA 0025992

Permit No. VA0025992
WATER QUALITY CRITERIA MONITORING– Part I Attachment A
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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS	SAMPLE TYPE[2]	SAMPLE FREQUENCY
11141-16-5	PCB 1232	608	1.0	<0.50	G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0	<0.50	G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0	<0.50	G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0	<0.50	G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0	<0.50	G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0	<5.0	G or SC	1/5 YR
120-12-7	Anthracene	625	10.0	<5.0	G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)	<5.0	G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0	<5.0	G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0	<5.0	G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0	<5.0	G or SC	1/5 YR
50-32-8	Benzo (a) pyrene	625	10.0	<5.0	G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)	<5.0	G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)	<5.0	G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0	<5.0	G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)	<5.0	G or SC	1/5 YR
218-01-9	Chrysene	625	10.0	<5.0	G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0	<5.0	G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0	<5.0	G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0	<5.0	G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0	<5.0	G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0	<5.0	G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine <25	(4)	(5) ~~5.0~~	~~<5.0~~	G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0	<5.0	G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0	<5.0	G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)	<5.0	G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0	<5.0	G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine <5.0	(4)	(5)	~~<5.0~~	G or SC	1/5 YR

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VA 0025992

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WATER QUALITY CRITERIA MONITORING– Part I Attachment A
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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[1]	REPORTING RESULTS	SAMPLE TYPE[2]	SAMPLE FREQUENCY
206-44-0	Fluoranthene	625	10.0	<5.0	G or SC	1/5 YR
86-73-7	Fluorene	625	10.0	<5.0	G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)	<5.0	G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)	<5.0	G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)	<10.0	G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)	<5.0	G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene <5.0	625	20.0	<10.0	G or SC	1/5 YR
78-59-1	Isophorone	625	10.0	<5.0	G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0	<5.0	G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)	<5.0	G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)	<5.0	G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)	<10.0	G or SC	1/5 YR
129-00-0	Pyrene	625	10.0	<5.0	G or SC	1/5 YR
120-82-1	1,2,4-Trichlorobenzene	625	10.0	<5.0	G or SC	1/5 YR
	VOLATILES					
107-02-8	Acrolein <100	(4)	(5)	~~13.0~~ <5.0	G	1/5 YR
107-13-1	Acrylonitrile <100	(4)	(5)	~~13.0~~	G	1/5 YR
71-43-2	Benzene	624	10.0	<5.0	G	1/5 YR
75-25-2	Bromoform	624	10.0	<5.0	G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0	<5.0	G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0	<5.0	G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0	<5.0	G	1/5 YR
67-66-3	Chloroform	624	10.0	<5.0	G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0	<5.0	G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0	<5.0	G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0	<5.0	G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0	<5.0	G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)	<5.0	G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)	<5.0	G	1/5 YR

Floyd-Floyd County PSA
VA 0025992

Permit No. VA0025992
WATER QUALITY CRITERIA MONITORING– Part I Attachment A

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL[5]	REPORTING RESULTS	SAMPLE TYPE[25]	SAMPLE FREQUENCY
542-75-6	1,3-Dichloropropene	(4)	(5)	< 5.0	G	1/5 YR
100-41-4	Ethylbenzene	624	10.0	< 5.0	G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)	< 10.0	G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)	< 5.0	G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0	< 5.0	G	1/5 YR
10-88-3	Toluene	624	10.0	< 5.0	G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)	< 5.0	G	1/5 YR
79-01-6	Trichloroethylene	624	10.0	< 5.0	G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0	< 5.0	G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR
	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES [6]						
95-57-8	2-Chlorophenol	625	10.0	< 5.0	G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0	< 5.0	G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0	< 10.0	G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)	< 50.0	G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)	< 20.0	G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0	< 25.0	G or SC	1/5 YR
108-95-2	Phenol	625	10.0	< 5.0	G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0	< 10.0	G or SC	1/5 YR
MISCELLANEOUS						
57-12-5	Cyanide, Total	(4)	10.0	0.007 mg/L	G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)	< 0.10	G or SC	1/5 YR
60-10-6	Tributyltin [7]	NBSR 85-3285	(5)	< 30.5	G or C	1/5 YR

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ANALYTICAL RESULTS

Project: 92132865 PCB's Test
Pace Project No.: 3569309

Sample: Outfall **Lab ID: 92132865001** Collected: 09/25/12 14:30 Received: 09/27/12 11:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
Heptachlor epoxide	ND	ug/L	0.011	1	09/28/12 12:30	09/28/12 20:41	1024-57-3	
Methoxychlor	ND	ug/L	0.011	1	09/28/12 12:30	09/28/12 20:41	72-43-5	
Mirex	ND	ug/L	0.011	1	09/28/12 12:30	09/28/12 20:41	2385-85-5	
Surrogates								
Tetrachloro-m-xylene (S)	93	%	66.5-120.3	1	09/28/12 12:30	09/28/12 20:41	877-09-8	
Decachlorobiphenyl (S)	63	%	41.7-109.1	1	09/28/12 12:30	09/28/12 20:41	2051-24-3	
8141GCS O/P Extended Pesticide	Analytical Method: EPA 8141 Preparation Method: EPA 3510							
Azinphos, methyl (Guthion)	ND	ug/L	0.50	1	10/02/12 15:00	10/04/12 00:04	86-50-0	L3
Chlorpyrifos	ND	ug/L	0.50	1	10/02/12 15:00	10/04/12 00:04	2921-88-2	
Demeton-O	ND	ug/L	0.50	1	10/02/12 15:00	10/04/12 00:04	298-03-3	
Demeton-S	ND	ug/L	0.50	1	10/02/12 15:00	10/04/12 00:04	126-75-0	
Malathion	ND	ug/L	0.50	1	10/02/12 15:00	10/04/12 00:04	121-75-5	
Parathion (Ethyl parathion)	ND	ug/L	1.0	1	10/02/12 15:00	10/04/12 00:04	56-38-2	L3
Surrogates								
4-Chloro3nitrobenzotrifluoride	54	%	34.2-122	1	10/02/12 15:00	10/04/12 00:04		
8270 MSSV SemiVOA App. II	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Kepone	ND	ug/L	21.0	1	10/01/12 08:00	10/01/12 23:18	143-50-0	N
Surrogates								
Nitrobenzene-d5 (S)	45	%	22-120	1	10/01/12 08:00	10/01/12 23:18	4165-60-0	
2-Fluorobiphenyl (S)	51	%	34-120	1	10/01/12 08:00	10/01/12 23:18	321-60-8	
Terphenyl-d14 (S)	41	%	39-138	1	10/01/12 08:00	10/01/12 23:18	1718-51-0	
Phenol-d6 (S)	10	%	10-120	1	10/01/12 08:00	10/01/12 23:18	13127-88-3	
2-Fluorophenol (S)	16	%	10-120	1	10/01/12 08:00	10/01/12 23:18	367-12-4	
2,4,6-Tribromophenol (S)	63	%	35-146	1	10/01/12 08:00	10/01/12 23:18	118-79-6	

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ANALYTICAL RESULTS

Project: DW Samples
Pace Project No.: 92118897

Sample: Outfall **Lab ID: 92118897001** Collected: 05/17/12 10:20 Received: 05/17/12 13:12 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
608 GCS Pesticides and PCBs	Analytical Method: EPA 608 Preparation Method: EPA 3535								
Aldrin	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	309-00-2	
alpha-BHC	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	319-84-6	
beta-BHC	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	319-85-7	
delta-BHC	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	58-89-9	
Chlordane (Technical)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	57-74-9	
4,4'-DDD	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	72-54-8	
4,4'-DDE	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	72-55-9	
4,4'-DDT	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	50-29-3	
Dieldrin	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	60-57-1	
Endosulfan I	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	959-98-8	
Endosulfan II	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	1031-07-8	
Endrin	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	72-20-8	
Endrin aldehyde	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	7421-93-4	
Heptachlor	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	76-44-8	
Heptachlor epoxide	ND	ug/L	0.050	0.050	1	05/25/12 18:00	05/29/12 13:21	1024-57-3	
PCB-1016 (Aroclor 1016)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	11096-82-5	
Toxaphene	ND	ug/L	0.50	0.50	1	05/25/12 18:00	05/29/12 13:21	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	48	%	20-110		1	05/25/12 18:00	05/29/12 13:21	877-09-8	H5
Decachlorobiphenyl (S)	86	%	20-138		1	05/25/12 18:00	05/29/12 13:21	2051-24-3	
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625								
Acenaphthene	ND	ug/L	5.0	0.25	1	05/23/12 10:00	05/24/12 11:34	83-32-9	
Acenaphthylene	ND	ug/L	5.0	0.21	1	05/23/12 10:00	05/24/12 11:34	208-96-8	
Anthracene	ND	ug/L	5.0	0.14	1	05/23/12 10:00	05/24/12 11:34	120-12-7	
Benzo(a)anthracene	ND	ug/L	5.0	0.33	1	05/23/12 10:00	05/24/12 11:34	56-55-3	
Benzo(a)pyrene	ND	ug/L	5.0	0.30	1	05/23/12 10:00	05/24/12 11:34	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	5.0	0.28	1	05/23/12 10:00	05/24/12 11:34	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	5.0	0.38	1	05/23/12 10:00	05/24/12 11:34	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	5.0	0.43	1	05/23/12 10:00	05/24/12 11:34	207-08-9	
4-Bromophenylphenyl ether	ND	ug/L	5.0	0.82	1	05/23/12 10:00	05/24/12 11:34	101-55-3	
Butylbenzylphthalate	ND	ug/L	5.0	0.79	1	05/23/12 10:00	05/24/12 11:34	85-68-7	
4-Chloro-3-methylphenol	ND	ug/L	5.0	3.7	1	05/23/12 10:00	05/24/12 11:34	59-50-7	
bis(2-Chloroethoxy)methane	ND	ug/L	10.0	0.92	1	05/23/12 10:00	05/24/12 11:34	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	5.0	1.0	1	05/23/12 10:00	05/24/12 11:34	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	5.0	0.95	1	05/23/12 10:00	05/24/12 11:34	108-60-1	
2-Chloronaphthalene	ND	ug/L	5.0	0.98	1	05/23/12 10:00	05/24/12 11:34	91-58-7	
2-Chlorophenol	ND	ug/L	5.0	1.3	1	05/23/12 10:00	05/24/12 11:34	95-57-8	

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ANALYTICAL RESULTS

Project: DW Samples
Pace Project No.: 92118897

Sample: Outfall **Lab ID: 92118897001** Collected: 05/17/12 10:20 Received: 05/17/12 13:12 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
625 MSSV	Analytical Method: EPA 625 Preparation Method: EPA 625								
4-Chlorophenylphenyl ether	ND	ug/L	5.0	0.87	1	05/23/12 10:00	05/24/12 11:34	7005-72-3	
Chrysene	ND	ug/L	5.0	0.21	1	05/23/12 10:00	05/24/12 11:34	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	5.0	0.55	1	05/23/12 10:00	05/24/12 11:34	53-70-3	
3,3'-Dichlorobenzidine	ND	ug/L	25.0	2.1	1	05/23/12 10:00	05/24/12 11:34	91-94-1	
2,4-Dichlorophenol	ND	ug/L	5.0	1.7	1	05/23/12 10:00	05/24/12 11:34	120-83-2	
Diethylphthalate	ND	ug/L	5.0	0.58	1	05/23/12 10:00	05/24/12 11:34	84-66-2	
2,4-Dimethylphenol	ND	ug/L	10.0	1.2	1	05/23/12 10:00	05/24/12 11:34	105-67-9	
Dimethylphthalate	ND	ug/L	5.0	0.76	1	05/23/12 10:00	05/24/12 11:34	131-11-3	
Di-n-butylphthalate	ND	ug/L	5.0	0.75	1	05/23/12 10:00	05/24/12 11:34	84-74-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	20.0	2.6	1	05/23/12 10:00	05/24/12 11:34	534-52-1	
2,4-Dinitrophenol	ND	ug/L	50.0	9.0	1	05/23/12 10:00	05/24/12 11:34	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	5.0	0.90	1	05/23/12 10:00	05/24/12 11:34	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	5.0	0.98	1	05/23/12 10:00	05/24/12 11:34	606-20-2	
Di-n-octylphthalate	ND	ug/L	5.0	0.66	1	05/23/12 10:00	05/24/12 11:34	117-84-0	
1,2-Diphenylhydrazine	ND	ug/L	5.0	0.90	1	05/23/12 10:00	05/24/12 11:34	122-66-7	
bis(2-Ethylhexyl)phthalate	ND	ug/L	5.0	0.79	1	05/23/12 10:00	05/24/12 11:34	117-81-7	
Fluoranthene	ND	ug/L	5.0	0.21	1	05/23/12 10:00	05/24/12 11:34	206-44-0	
Fluorene	ND	ug/L	5.0	0.21	1	05/23/12 10:00	05/24/12 11:34	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	0.94	1	05/23/12 10:00	05/24/12 11:34	87-68-3	
Hexachlorobenzene	ND	ug/L	5.0	0.72	1	05/23/12 10:00	05/24/12 11:34	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	10.0	0.88	1	05/23/12 10:00	05/24/12 11:34	77-47-4	
Hexachloroethane	ND	ug/L	5.0	1.1	1	05/23/12 10:00	05/24/12 11:34	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	5.0	0.29	1	05/23/12 10:00	05/24/12 11:34	193-39-5	
Isophorone	ND	ug/L	10.0	0.89	1	05/23/12 10:00	05/24/12 11:34	78-59-1	
Naphthalene	ND	ug/L	5.0	0.34	1	05/23/12 10:00	05/24/12 11:34	91-20-3	
Nitrobenzene	ND	ug/L	5.0	1.1	1	05/23/12 10:00	05/24/12 11:34	98-95-3	
2-Nitrophenol	ND	ug/L	5.0	0.91	1	05/23/12 10:00	05/24/12 11:34	88-75-5	
4-Nitrophenol	ND	ug/L	50.0	4.1	1	05/23/12 10:00	05/24/12 11:34	100-02-7	
N-Nitrosodimethylamine	ND	ug/L	5.0	0.91	1	05/23/12 10:00	05/24/12 11:34	62-75-9	
N-Nitroso-di-n-propylamine	ND	ug/L	5.0	0.99	1	05/23/12 10:00	05/24/12 11:34	621-64-7	
N-Nitrosodiphenylamine	ND	ug/L	10.0	1.0	1	05/23/12 10:00	05/24/12 11:34	86-30-6	
Pentachlorophenol	ND	ug/L	25.0	4.6	1	05/23/12 10:00	05/24/12 11:34	87-86-5	
Phenanthrene	ND	ug/L	5.0	0.22	1	05/23/12 10:00	05/24/12 11:34	85-01-8	
Phenol	ND	ug/L	5.0	1.9	1	05/23/12 10:00	05/24/12 11:34	108-95-2	
Pyrene	ND	ug/L	5.0	0.19	1	05/23/12 10:00	05/24/12 11:34	129-00-0	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	0.98	1	05/23/12 10:00	05/24/12 11:34	120-82-1	
2,4,6-Trichlorophenol	ND	ug/L	10.0	1.3	1	05/23/12 10:00	05/24/12 11:34	88-06-2	
Surrogates									
Nitrobenzene-d5 (S)	31	%	10-120		1	05/23/12 10:00	05/24/12 11:34	4165-60-0	
2-Fluorobiphenyl (S)	29	%	15-120		1	05/23/12 10:00	05/24/12 11:34	321-60-8	
Terphenyl-d14 (S)	47	%	11-131		1	05/23/12 10:00	05/24/12 11:34	1718-51-0	
Phenol-d6 (S)	12	%	10-120		1	05/23/12 10:00	05/24/12 11:34	13127-88-3	
2-Fluorophenol (S)	17	%	10-120		1	05/23/12 10:00	05/24/12 11:34	367-12-4	
2,4,6-Tribromophenol (S)	44	%	10-137		1	05/23/12 10:00	05/24/12 11:34	118-79-6	

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ANALYTICAL RESULTS

Project: DW Samples
Pace Project No.: 92118897

Sample: Outfall **Lab ID: 92118897001** Collected: 05/17/12 10:20 Received: 05/17/12 13:12 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
624 Volatile Organics	Analytical Method: EPA 624								
Acrolein	ND	ug/L	100	8.8	1		05/30/12 14:10	107-02-8	
Acrylonitrile	ND	ug/L	100	11.5	1		05/30/12 14:10	107-13-1	
Benzene	ND	ug/L	5.0	1.7	1		05/30/12 14:10	71-43-2	
Bromodichloromethane	ND	ug/L	5.0	1.7	1		05/30/12 14:10	75-27-4	
Bromoform	ND	ug/L	5.0	1.5	1		05/30/12 14:10	75-25-2	
Bromomethane	ND	ug/L	10.0	2.5	1		05/30/12 14:10	74-83-9	
Carbon tetrachloride	ND	ug/L	5.0	1.9	1		05/30/12 14:10	56-23-5	
Chlorobenzene	ND	ug/L	5.0	1.7	1		05/30/12 14:10	108-90-7	
Chloroethane	ND	ug/L	10.0	1.6	1		05/30/12 14:10	75-00-3	
Chloroform	ND	ug/L	5.0	1.9	1		05/30/12 14:10	67-66-3	
Chloromethane	ND	ug/L	5.0	1.5	1		05/30/12 14:10	74-87-3	
Dibromochloromethane	ND	ug/L	5.0	1.8	1		05/30/12 14:10	124-48-1	
1,2-Dichlorobenzene	ND	ug/L	5.0	1.5	1		05/30/12 14:10	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	1.5	1		05/30/12 14:10	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	1.5	1		05/30/12 14:10	106-46-7	
1,1-Dichloroethane	ND	ug/L	5.0	1.8	1		05/30/12 14:10	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		05/30/12 14:10	107-06-2	
1,1-Dichloroethene	ND	ug/L	5.0	1.9	1		05/30/12 14:10	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	1.8	1		05/30/12 14:10	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	1.8	1		05/30/12 14:10	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	1.7	1		05/30/12 14:10	78-87-5	
cis-1,3-Dichloropropene	ND	ug/L	5.0	1.6	1		05/30/12 14:10	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	1.6	1		05/30/12 14:10	10061-02-6	
Ethylbenzene	ND	ug/L	5.0	1.6	1		05/30/12 14:10	100-41-4	
Methylene Chloride	ND	ug/L	5.0	1.9	1		05/30/12 14:10	75-09-2	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	1.5	1		05/30/12 14:10	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	1.8	1		05/30/12 14:10	127-18-4	
Toluene	ND	ug/L	5.0	1.6	1		05/30/12 14:10	108-88-3	
1,1,1-Trichloroethane	ND	ug/L	5.0	1.9	1		05/30/12 14:10	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	1.7	1		05/30/12 14:10	79-00-5	
Trichloroethene	ND	ug/L	5.0	1.8	1		05/30/12 14:10	79-01-6	
Trichlorofluoromethane	ND	ug/L	10.0	1.7	1		05/30/12 14:10	75-69-4	
Vinyl chloride	ND	ug/L	5.0	1.5	1		05/30/12 14:10	75-01-4	
Surrogates									
Dibromofluoromethane (S)	113	%	70-130		1		05/30/12 14:10	1868-53-7	
4-Bromofluorobenzene (S)	95	%	70-130		1		05/30/12 14:10	460-00-4	
Toluene-d8 (S)	96	%	70-130		1		05/30/12 14:10	2037-26-5	
1,2-Dichloroethane-d4 (S)	126	%	70-130		1		05/30/12 14:10	17060-07-0	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2D								
Sulfide	ND	mg/L	0.10	0.10	1		05/19/12 11:20	18496-25-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E								
Cyanide	0.0071	mg/L	0.0050	0.0050	1		05/29/12 16:22	57-12-5	

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QUALIFIERS

Project: DW Samples
Pace Project No.: 92118897

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Acid preservation may not be appropriate for 2-Chloroethylvinyl ether, Styrene, and Vinyl chloride.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H5	Reanalysis conducted in excess of EPA method holding time. Results confirm original analysis performed in hold time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
R1	RPD value was outside control limits.

UNIVERSAL LABORATORIES

REPORT OF ANALYSIS

Order ID: 1205439

(REPORT DATE)
06-Jun-12

TO: Pace Analytical
9800 Kincey Avenue

Huntersville NC 28090

ATTN: Craig Griffen

FaxNumber:
E-MAIL

This report contains the analytical results for Project Id N/A designated as UL Order Id **1205439** and received on *Tuesday, May 22, 2012*
The results contained in this report relate only to the samples identified on this order. The analytical results meet all requirements of NELAC unless specifically stated. This report shall not be reproduced except in full.

The data in this report has been reviewed and validated by:

Carol Kleemeier — Signature
Carol Kleemeier — Name
Pres/Tech Director — Title

ANALYTICAL DATA REPORT

UL ORDER ID 1205439

UL Sample Number	1205439-001	Sample Site:	Outfall
Grab Date/Time:	5/17/2012 10:20:00	Client Sample ID:	Outfall
Composite Start:	N/A	Sample Matrix:	Stormwater
Composite Stop:	N/A		
Collected By:	Client		

Parameter	Test Result	Units	RL	Analysis Date/Time	Location	Comment
GC/FPD						
TBT Tributyltin	<30 S	ng/l	30	6/4/2012 19:18:00	HAM	

Comments for 1205439-001

No comments

ANALYTICAL DATA REPORT

UL ORDER ID **1205439**

Analytical Methods Reference

VDEH Lab# 00030 (Hampton) VDEH Lab# 00065 (Fredericksburg) NCWW Lab # 543 (Hampton)
NCDW Lab # 51708 (Hampton) VELAP ID 460036 (Hampton) VELAP ID 460164 (Fredericksburg

Description:	*Prep Method:*	*Method*	*Reference*	*accredited/status*
Stormwater				
Tributyltin	liq/liq	GC/FPD		Accredited

NOTE: Analysis is performed according to Universal Laboratories Standard Operating Procedures which are based on the analytical methods referenced above

GLOSSARY OF TERMS AND ABBREVIATIONS

RL (Reporting Limit): The minimum levels, concentrations, or quantities of target analyte that can be reported with a specified degree of confidence.Generally this number is near or equal to the lowest calibration standard run with the analytical batch.

MDL (Method Detection Limit): The constituent concentration that, when processed through the complete method, produces a signal with a 99% probability that it is different from the blank.

LCS (Laboratory Control Sample): is a sample matrix free from the analytes of interest, spiked with verified amounts of analytes.

MS (Matrix Spike): a sample prepared by adding a known mass of target analyte to a specific amount of sample for which an independent estimate of target analyte concentration is available.

MSD (Matrix Spike Duplicate): is a replicate matrix spike prepared in the laboratory and anlyzed to obtain a measure of the precision recovery for each analtye.

Surrogate is a substance with properties that mimic the analyte of interest.It is unlikely to be found in environmental samples and is added to them for quality control purposes

IS (Internal Standard): is a known amount of standard added to a test portion of the sample as a reference for evaluation and controlling the precsion and bias of the applied analytical method.

RPD (Relative Percent Difference) is the difference between a set of sample duplicates or sample spike duplicates

ICV (Initial Calibration Verification) CCV (Continuing Calibration Verification) FCV (Final Calibration Verification)

Method Blank is a sample matrix similar to the batch of associated samples that is free from analytes of interest and is processed simultaneously with and under the same conditions as samples.

Trip Blank is a sample of analyte free media collected in the same type of container that is required for the analytical test, taken from the laboratory to the sampling site and returned to the laboratory unopened. A trip blank is used to document contamination attributable to shipping and field handling procedures

Holding Time is the maximum times that samples may be held prior to analysis and still be considered valid or not compromised

ug/L=ppb ug/kg=ppb mg/kg=ppm mg/L=ppm

HAM= Analyzed in Hampton Lab

FRED= Analyzed in Fredericksburg Lab

QC Flag	Description
B	Analyte found in method blank
H	Holding time exceeded
L	LCS outside acceptable limits
V	ICV/CCV/FCV outside acceptable limits
D	RPD outside acceptable limits
MS	Matrix spike recovery outside acceptable limits
J	Result above calibration curve approximate value
QC	Method QC Critera not met
MI	Matrix Interference
S	Surrogate outside acceptable limits
IS	Internal standard outside acceptable limits

PROCHEM Analytical Incorporated

Final Report

PCA Order No.: 417534
Report Date: 2/18/2008
Client: Floyd County Public Service Authority
Project:

Sample Number: 417534-01
Description: 001 Effluent
Date Collected: 1/29/2008
Matrix: Wastewater
Time Collected: 10:32
Sample Type: Grab

Analysis	Result	Reporting Limit	Units	Date Analyzed	Time Analyzed	Analyst	Method
Mercury, Dissolved	< 0.0002	0.0002	mg/L	2/15/2008	11:18	KNB	EPA 245.2
Chemical Oxygen Demand	129	20	mg/L	2/6/2008	08:00	ASB	EPA 410.4
Hexavalent Chromium	< 0.002	0.002	mg/L	1/30/2008	07:00	ASB	ASTM D1687
Antimony, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Arsenic, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Cadmium, Dissolved	< 0.001	0.001	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Chromium	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Copper, Dissolved	0.012	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Lead, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Nickel, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Selenium, Dissolved	< 0.005	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Silver, Dissolved	< 0.002	0.002	mg/L	2/1/2008	12:30	CDM	EPA 200.7
Zinc, Dissolved	0.060	0.005	mg/L	2/1/2008	12:30	CDM	EPA 200.7

Floyd-Floyd County PSA WWTP
VA0025992

Effluent Total Recoverable Copper Data

Date DMR Data Due	Concentration (µg/L)
10-Dec-2005	13
10-Jan-2006	11
10-Feb-2006	11
10-Mar-2006	14
10-Apr-2006	11
10-May-2006	18
10-Jun-2006	18
10-Jul-2006	18
10-Aug-2006	14
10-Sep-2006	13
10-Oct-2006	5
10-Nov-2006	18
10-Dec-2006	16
10-Jan-2007	11
10-Feb-2007	7
10-Mar-2007	14
10-Apr-2007	15
10-May-2007	19
10-Jun-2007	17
10-Jul-2007	18
10-Aug-2007	18
10-Sep-2007	18
10-Oct-2007	20

Attachment G

Wasteload and Limit Calculations

- **Mixing Zone Calculations (MIXER 2.1)**
- **Antidegradation Wasteload Allocation Spreadsheet**
- **STATS Program Results (ammonia, copper, cyanide, TRC, zinc)**

Mixing Zone Predictions for Floyd-Floyd County PSA WWTP

Effluent Flow = 0.25 MGD
Stream 7Q10 = 5.1 MGD
Stream 30Q10 = 6.2 MGD
Stream 1Q10 = 4.7 MGD
Stream slope = 0.00234 ft/ft
Stream width = 15 ft
Bottom scale = 2
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .7753 ft
Length = 342.01 ft
Velocity = .7121 ft/sec
Residence Time = .0056 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .8714 ft
Length = 307.9 ft
Velocity = .7639 ft/sec
Residence Time = .0047 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .7387 ft
Length = 357.16 ft
Velocity = .6915 ft/sec
Residence Time = .1435 hours

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used.

FRESHWATER
WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Floyd - Floyd County PSA WWTP Permit No.: VA0025992

Receiving Stream: Dodd Creek Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	34 mg/L
90% Temperature (Annual) =	21.1 deg C
90% Temperature (Wet season) =	15.4 deg C
90% Maximum pH =	8.4 SU
10% Maximum pH =	7.2 SU
Tier Designation (1 or 2) =	2
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	y
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	4.7 MGD
7Q10 (Annual) =	5.1 MGD
30Q10 (Annual) =	6.2 MGD
1Q10 (Wet season) =	6.3 MGD
30Q10 (Wet season)	9.6 MGD
30Q5 =	7 MGD
Harmonic Mean =	12.9 MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	109 mg/L
90% Temp (Annual) =	24.4 deg C
90% Temp (Wet season) =	19.3 deg C
90% Maximum pH =	7.74 SU
10% Maximum pH =	6.29 SU
Discharge Flow =	0.25 MGD

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenapthene	0	--	--	na	9.9E+02	--	--	na	2.9E+04	--	--	na	9.9E+01	--	--	na	2.9E+03	--	--	na	2.9E+03
Acrolein	0	--	--	na	9.3E+00	--	--	na	2.7E+02	--	--	na	9.3E-01	--	--	na	2.7E+01	--	--	na	2.7E+01
Acrylonitrile [C]	0	--	--	na	2.5E+00	--	--	na	1.3E+02	--	--	na	2.5E-01	--	--	na	1.3E+01	--	--	na	1.3E+01
Aldrin [C]	0	3.0E+00	--	na	5.0E-04	5.9E+01	--	na	2.6E-02	7.5E-01	--	na	5.0E-05	1.5E+01	--	na	2.6E-03	1.5E+01	--	na	2.6E-03
Ammonia-N (mg/l) (Yearly)	0	2.98E+00	9.20E-01	na	--	5.9E+01	2.4E+01	na	--	7.46E-01	2.30E-01	na	--	1.5E+01	5.9E+00	na	--	1.5E+01	5.9E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	2.89E+00	1.29E+00	na	--	7.6E+01	5.1E+01	na	--	7.22E-01	3.22E-01	na	--	1.9E+01	1.3E+01	na	--	1.9E+01	1.3E+01	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	1.2E+06	--	--	na	4.0E+03	--	--	na	1.2E+05	--	--	na	1.2E+05
Antimony	0	--	--	na	6.4E+02	--	--	na	1.9E+04	--	--	na	6.4E+01	--	--	na	1.9E+03	--	--	na	1.9E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	6.7E+03	3.2E+03	na	--	8.5E+01	3.8E+01	na	--	1.7E+03	8.0E+02	na	--	1.7E+03	8.0E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Benzene [C]	0	--	--	na	5.1E+02	--	--	na	2.7E+04	--	--	na	5.1E+01	--	--	na	2.7E+03	--	--	na	2.7E+03
Benzidine [C]	0	--	--	na	2.0E-03	--	--	na	1.1E-01	--	--	na	2.0E-04	--	--	na	1.1E-02	--	--	na	1.1E-02
Benzo (a) anthracene [C]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
Benzo (b) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
Benzo (k) fluoranthene [C]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
Benzo (a) pyrene [C]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
Bis2-Chloroethyl Ether [C]	0	--	--	na	5.3E+00	--	--	na	2.8E+02	--	--	na	5.3E-01	--	--	na	2.8E+01	--	--	na	2.8E+01
Bis2-Chloroisopropyl Ether	0	--	--	na	6.5E+04	--	--	na	1.9E+06	--	--	na	6.5E+03	--	--	na	1.9E+05	--	--	na	1.9E+05
Bis 2-Ethylhexyl Phthalate [C]	0	--	--	na	2.2E+01	--	--	na	1.2E+03	--	--	na	2.2E+00	--	--	na	1.2E+02	--	--	na	1.2E+02
Bromoform [C]	0	--	--	na	1.4E+03	--	--	na	7.4E+04	--	--	na	1.4E+02	--	--	na	7.4E+03	--	--	na	7.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	5.5E+04	--	--	na	1.9E+02	--	--	na	5.5E+03	--	--	na	5.5E+03
Cadmium	0	1.3E+00	5.3E-01	na	--	2.6E+01	1.1E+01	na	--	3.3E-01	1.3E-01	na	--	6.5E+00	2.8E+00	na	--	6.5E+00	2.8E+00	na	--
Carbon Tetrachloride [C]	0	--	--	na	1.6E+01	--	--	na	8.4E+02	--	--	na	1.6E+00	--	--	na	8.4E+01	--	--	na	8.4E+01
Chlordane [C]	0	2.4E+00	4.3E-03	na	8.1E-03	4.8E+01	9.2E-02	na	4.3E-01	6.0E-01	1.1E-03	na	8.1E-04	1.2E+01	2.3E-02	na	4.3E-02	1.2E+01	2.3E-02	na	4.3E-02
Chloride	0	8.6E+05	2.3E+05	na	--	1.7E+07	4.9E+06	na	--	2.2E+05	5.8E+04	na	--	4.3E+06	1.2E+06	na	--	4.3E+06	1.2E+06	na	--
TRC	0	1.9E+01	1.1E+01	na	--	3.8E+02	2.4E+02	na	--	4.8E+00	2.8E+00	na	--	9.4E+01	5.9E+01	na	--	9.4E+01	5.9E+01	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	4.6E+04	--	--	na	1.6E+02	--	--	na	4.6E+03	--	--	na	4.6E+03

Parameter	Background	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
(ug/l unless noted)	Conc.	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane[C]	0	--	--	na	1.3E+02	--	--	na	6.8E+03	--	--	na	1.3E+01	--	--	na	6.8E+02	--	--	na	6.8E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	3.2E+05	--	--	na	1.1E+03	--	--	na	3.2E+04	--	--	na	3.2E+04
2-Chloronaphthatene	0	--	--	na	1.6E+03	--	--	na	4.6E+04	--	--	na	1.6E+02	--	--	na	4.6E+03	--	--	na	4.6E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	4.4E+03	--	--	na	1.5E+01	--	--	na	4.4E+02	--	--	na	4.4E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	1.6E+00	8.8E-01	na	--	2.1E-02	1.0E-02	na	--	4.1E-01	2.2E-01	na	--	4.1E-01	2.2E-01	na	--
Chromium III	0	2.6E+02	3.3E+01	na	--	5.1E+03	7.1E+02	na	--	6.4E+01	8.3E+00	na	--	1.3E+03	1.8E+02	na	--	1.3E+03	1.8E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	3.2E+02	2.4E+02	na	--	4.0E+00	2.8E+00	na	--	7.9E+01	5.9E+01	na	--	7.9E+01	5.9E+01	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	--	--	--	1.0E+01	--	--	--	2.9E+02	--	--	--	na	--
Chrysene [C]	0	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	1.8E-03	--	--	na	9.5E-02	--	--	na	9.5E-02
Copper	0	5.4E+00	3.9E+00	na	--	1.1E+02	8.3E+01	na	--	1.3E+00	9.7E-01	na	--	2.7E+01	2.1E+01	na	--	2.7E+01	2.1E+01	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	4.4E+02	1.1E+02	na	4.6E+05	5.5E+00	1.3E+00	na	1.6E+03	1.1E+02	2.8E+01	na	4.6E+04	1.1E+02	2.8E+01	na	4.6E+04
DDD [C]	0	--	--	na	3.1E-03	--	--	na	1.6E-01	--	--	na	3.1E-04	--	--	na	1.6E-02	--	--	na	1.6E-02
DDE [C]	0	--	--	na	2.2E-03	--	--	na	1.2E-01	--	--	na	2.2E-04	--	--	na	1.2E-02	--	--	na	1.2E-02
DDT [C]	0	1.1E+00	1.0E-03	na	2.2E-03	2.2E+01	2.1E-02	na	1.2E-01	2.8E-01	2.5E-04	na	2.2E-04	5.4E+00	5.4E-03	na	1.2E-02	5.4E+00	5.4E-03	na	1.2E-02
Demeton	0	--	1.0E-01	na	--	--	2.1E+00	na	--	--	2.5E-02	na	--	--	5.4E-01	na	--	--	5.4E-01	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	3.4E+00	3.6E+00	na	--	4.3E-02	4.3E-02	na	--	8.4E-01	9.1E-01	na	--	8.4E-01	9.1E-01	na	--
Dibenz(a,h)anthracene [C]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	3.8E+04	--	--	na	1.3E+02	--	--	na	3.8E+03	--	--	na	3.8E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	2.8E+04	--	--	na	9.6E+01	--	--	na	2.8E+03	--	--	na	2.8E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	5.5E+03	--	--	na	1.9E+01	--	--	na	5.5E+02	--	--	na	5.5E+02
3,3-Dichlorobenzidine[C]	0	--	--	na	2.8E-01	--	--	na	1.5E+01	--	--	na	2.8E-02	--	--	na	1.5E+00	--	--	na	1.5E+00
Dichlorobromomethane [C]	0	--	--	na	1.7E+02	--	--	na	8.9E+03	--	--	na	1.7E+01	--	--	na	8.9E+02	--	--	na	8.9E+02
1,2-Dichloroethane [C]	0	--	--	na	3.7E+02	--	--	na	1.9E+04	--	--	na	3.7E+01	--	--	na	1.9E+03	--	--	na	1.9E+03
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	2.1E+05	--	--	na	7.1E+02	--	--	na	2.1E+04	--	--	na	2.1E+04
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	2.9E+05	--	--	na	1.0E+03	--	--	na	2.9E+04	--	--	na	2.9E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	8.4E+03	--	--	na	2.9E+01	--	--	na	8.4E+02	--	--	na	8.4E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane[C]	0	--	--	na	1.5E+02	--	--	na	7.9E+03	--	--	na	1.5E+01	--	--	na	7.9E+02	--	--	na	7.9E+02
1,3-Dichloropropene [C]	0	--	--	na	2.1E+02	--	--	na	1.1E+04	--	--	na	2.1E+01	--	--	na	1.1E+03	--	--	na	1.1E+03
Dieldrin [C]	0	2.4E-01	5.6E-02	na	5.4E-04	4.8E+00	1.2E+00	na	2.8E-02	6.0E-02	1.4E-02	na	5.4E-05	1.2E+00	3.0E-01	na	2.8E-03	1.2E+00	3.0E-01	na	2.8E-03
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	1.3E+06	--	--	na	4.4E+03	--	--	na	1.3E+05	--	--	na	1.3E+05
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	2.5E+04	--	--	na	8.5E+01	--	--	na	2.5E+03	--	--	na	2.5E+03
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	3.2E+07	--	--	na	1.1E+05	--	--	na	3.2E+06	--	--	na	3.2E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	1.3E+05	--	--	na	4.5E+02	--	--	na	1.3E+04	--	--	na	1.3E+04
2,4 Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	1.5E+05	--	--	na	5.3E+02	--	--	na	1.5E+04	--	--	na	1.5E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	8.1E+03	--	--	na	2.8E+01	--	--	na	8.1E+02	--	--	na	8.1E+02
2,4-Dinitrotoluene [C]	0	--	--	na	3.4E+01	--	--	na	1.8E+03	--	--	na	3.4E+00	--	--	na	1.8E+02	--	--	na	1.8E+02
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	1.5E-06	--	--	na	5.1E-09	--	--	na	1.5E-07	--	--	na	1.5E-07
1,2-Diphenylhydrazine[C]	0	--	--	na	2.0E+00	--	--	na	1.1E+02	--	--	na	2.0E-01	--	--	na	1.1E+01	--	--	na	1.1E+01
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.4E+00	1.2E+00	na	2.6E+03	5.5E-02	1.4E-02	na	8.9E+00	1.1E+00	3.0E-01	na	2.6E+02	1.1E+00	3.0E-01	na	2.6E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	4.4E+00	1.2E+00	na	2.6E+03	5.5E-02	1.4E-02	na	8.9E+00	1.1E+00	3.0E-01	na	2.6E+02	1.1E+00	3.0E-01	na	2.6E+02
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	4.4E+00	1.2E+00	--	--	5.5E-02	1.4E-02	--	--	1.1E+00	3.0E-01	--	--	1.1E+00	3.0E-01	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	2.6E+03	--	--	na	8.9E+00	--	--	na	2.6E+02	--	--	na	2.6E+02
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	1.7E+00	7.7E-01	na	1.7E+00	2.2E-02	9.0E-03	na	6.0E-03	4.3E-01	1.9E-01	na	1.7E-01	4.3E-01	1.9E-01	na	1.7E-01
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	8.7E+00	--	--	na	3.0E-02	--	--	na	8.7E-01	--	--	na	8.7E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	6.1E+04	--	--	na	2.1E+02	--	--	na	6.1E+03	--	--	na	6.1E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	4.1E+03	--	--	na	1.4E+01	--	--	na	4.1E+02	--	--	na	4.1E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	1.5E+05	--	--	na	5.3E+02	--	--	na	1.5E+04	--	--	na	1.5E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	2.1E-01	na	--	--	2.5E-03	na	--	--	5.4E-02	na	--	--	5.4E-02	na	--
Heptachlor [c]	0	5.2E-01	3.8E-03	na	7.9E-04	1.0E+01	8.1E-02	na	4.2E-02	1.3E-01	9.5E-04	na	7.9E-05	2.6E+00	2.0E-02	na	4.2E-03	2.6E+00	2.0E-02	na	4.2E-03
Heptachlor Epoxide [c]	0	5.2E-01	3.8E-03	na	3.9E-04	1.0E+01	8.1E-02	na	2.1E-02	1.3E-01	9.5E-04	na	3.9E-05	2.6E+00	2.0E-02	na	2.1E-03	2.6E+00	2.0E-02	na	2.1E-03
Hexachlorobenzene [c]	0	--	--	na	2.9E-03	--	--	na	1.5E-01	--	--	na	2.9E-04	--	--	na	1.5E-02	--	--	na	1.5E-02
Hexachlorobutadiene [c]	0	--	--	na	1.8E+02	--	--	na	9.5E+03	--	--	na	1.8E+01	--	--	na	9.5E+02	--	--	na	9.5E+02
Hexachlorocyclohexane Alpha-BHC [c]	0	--	--	na	4.9E-02	--	--	na	2.6E+00	--	--	na	4.9E-03	--	--	na	2.6E-01	--	--	na	2.6E-01
Hexachlorocyclohexane Beta-BHC [c]	0	--	--	na	1.7E-01	--	--	na	8.9E+00	--	--	na	1.7E-02	--	--	na	8.9E-01	--	--	na	8.9E-01
Hexachlorocyclohexane Gamma-BHC [c] (Lindane)	0	9.5E-01	na	na	1.8E+00	1.9E+01	--	na	9.5E+01	2.4E-01	--	na	1.8E-01	4.7E+00	--	na	9.5E+00	4.7E+00	--	na	9.5E+00
Hexachlorocyclopentadiene	0	--	--	na	1.1E+03	--	--	na	3.2E+04	--	--	na	1.1E+02	--	--	na	3.2E+03	--	--	na	3.2E+03
Hexachloroethane [c]	0	--	--	na	3.3E+01	--	--	na	1.7E+03	--	--	na	3.3E+00	--	--	na	1.7E+02	--	--	na	1.7E+02
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	4.3E+01	na	--	--	5.0E-01	na	--	--	1.1E+01	na	--	--	1.1E+01	na	--
Indeno (1,2,3-cd) pyrene [c]	0	--	--	na	1.8E-01	--	--	na	9.5E+00	--	--	na	1.8E-02	--	--	na	9.5E-01	--	--	na	9.5E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone [c]	0	--	--	na	9.6E+03	--	--	na	5.0E+05	--	--	na	9.6E+02	--	--	na	5.0E+04	--	--	na	5.0E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Lead	0	3.4E+01	3.9E+00	na	--	6.8E+02	8.3E+01	na	--	8.6E+00	9.7E-01	na	--	1.7E+02	2.1E+01	na	--	1.7E+02	2.1E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	2.1E+00	na	--	--	2.5E-02	na	--	--	5.4E-01	na	--	--	5.4E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	2.8E+01	1.6E+01	--	--	3.5E-01	1.9E-01	--	--	6.9E+00	4.1E+00	--	--	6.9E+00	4.1E+00	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	4.4E+04	--	--	na	1.5E+02	--	--	na	4.4E+03	--	--	na	4.4E+03
Methylene Chloride [c]	0	--	--	na	5.9E+03	--	--	na	3.1E+05	--	--	na	5.9E+02	--	--	na	3.1E+04	--	--	na	3.1E+04
Methoxychlor	0	--	3.0E-02	na	--	--	6.4E-01	na	--	--	7.5E-03	na	--	--	1.6E-01	na	--	--	1.6E-01	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Nickel	0	8.0E+01	8.8E+00	na	4.6E+03	1.6E+03	1.9E+02	na	1.3E+05	2.0E+01	2.2E+00	na	4.6E+02	4.0E+02	4.7E+01	na	1.3E+04	4.0E+02	4.7E+01	na	1.3E+04
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	2.0E+04	--	--	na	6.9E+01	--	--	na	2.0E+03	--	--	na	2.0E+03
N-Nitrosodimethylamine [c]	0	--	--	na	3.0E+01	--	--	na	1.6E+03	--	--	na	3.0E+00	--	--	na	1.6E+02	--	--	na	1.6E+02
N-Nitrosodiphenylamine [c]	0	--	--	na	6.0E+01	--	--	na	3.2E+03	--	--	na	6.0E+00	--	--	na	3.2E+02	--	--	na	3.2E+02
N-Nitrosodi-n-propylamine [c]	0	--	--	na	5.1E+00	--	--	na	2.7E+02	--	--	na	5.1E-01	--	--	na	2.7E+01	--	--	na	2.7E+01
Nonylphenol	0	2.8E+01	6.6E+00	--	--	5.5E+02	1.4E+02	na	--	7.0E+00	1.7E+00	--	--	1.4E+02	3.5E+01	--	--	1.4E+02	3.5E+01	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	1.3E+00	2.8E-01	na	--	1.6E-02	3.3E-03	na	--	3.2E-01	7.0E-02	na	--	3.2E-01	7.0E-02	na	--
PCB Total [c]	0	--	1.4E-02	na	6.4E-04	--	3.0E-01	na	3.4E-02	--	3.5E-03	na	6.4E-05	--	7.5E-02	na	3.4E-03	--	7.5E-02	na	3.4E-03
Pentachlorophenol [c]	0	9.3E+00	7.2E+00	na	3.0E+01	1.8E+02	1.5E+02	na	1.6E+03	2.3E+00	1.8E+00	na	3.0E+00	4.6E+01	3.9E+01	na	1.6E+02	4.6E+01	3.9E+01	na	1.6E+02
Phenol	0	--	--	na	8.6E+05	--	--	na	2.5E+07	--	--	na	8.6E+04	--	--	na	2.5E+06	--	--	na	2.5E+06
Pyrene	0	--	--	na	4.0E+03	--	--	na	1.2E+05	--	--	na	4.0E+02	--	--	na	1.2E+04	--	--	na	1.2E+04
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	1.2E+02	--	--	na	4.0E-01	--	--	na	1.2E+01	--	--	na	1.2E+01
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	4.0E+02	1.1E+02	na	1.2E+05	5.0E+00	1.3E+00	na	4.2E+02	9.9E+01	2.7E+01	na	1.2E+04	9.9E+01	2.7E+01	na	1.2E+04
Silver	0	6.5E-01	--	na	--	1.3E+01	--	na	--	1.6E-01	--	na	--	3.2E+00	--	na	--	3.2E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane[C]	0	--	--	na	4.0E+01	--	--	na	2.1E+03	--	--	na	4.0E+00	--	--	na	2.1E+02	--	--	na	2.1E+02
Tetrachloroethylene[C]	0	--	--	na	3.3E+01	--	--	na	1.7E+03	--	--	na	3.3E+00	--	--	na	1.7E+02	--	--	na	1.7E+02
Thallium	0	--	--	na	4.7E-01	--	--	na	1.4E+01	--	--	na	4.7E-02	--	--	na	1.4E+00	--	--	na	1.4E+00
Toluene	0	--	--	na	6.0E+03	--	--	na	1.7E+05	--	--	na	6.0E+02	--	--	na	1.7E+04	--	--	na	1.7E+04
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene [C]	0	7.3E-01	2.0E-04	na	2.8E-03	1.4E+01	4.3E-03	na	1.5E-01	1.8E-01	5.0E-05	na	2.8E-04	3.6E+00	1.1E-03	na	1.5E-02	3.6E+00	1.1E-03	na	1.5E-02
Tributyltin	0	4.6E-01	7.2E-02	na	--	9.1E+00	1.5E+00	na	--	1.2E-01	1.8E-02	na	--	2.3E+00	3.9E-01	na	--	2.3E+00	3.9E-01	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	2.0E+03	--	--	na	7.0E+00	--	--	na	2.0E+02	--	--	na	2.0E+02
1,1,2-Trichloroethane[C]	0	--	--	na	1.6E+02	--	--	na	8.4E+03	--	--	na	1.6E+01	--	--	na	8.4E+02	--	--	na	8.4E+02
Trichloroethylene [C]	0	--	--	na	3.0E+02	--	--	na	1.6E+04	--	--	na	3.0E+01	--	--	na	1.6E+03	--	--	na	1.6E+03
2,4,6-Trichlorophenol [C]	0	--	--	na	2.4E+01	--	--	na	1.3E+03	--	--	na	2.4E+00	--	--	na	1.3E+02	--	--	na	1.3E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride[C]	0	--	--	na	2.4E+01	--	--	na	1.3E+03	--	--	na	2.4E+00	--	--	na	1.3E+02	--	--	na	1.3E+02
Zinc	0	5.1E+01	5.1E+01	na	2.6E+04	1.0E+03	1.1E+03	na	7.5E+05	1.3E+01	1.3E+01	na	2.6E+03	2.5E+02	2.8E+02	na	7.5E+04	2.5E+02	2.8E+02	na	7.5E+04

Notes:

1. All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
2. Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
3. Metals measured as Dissolved, unless specified otherwise
4. "C" indicates a carcinogenic parameter
5. Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information. Antidegradation WLAs are based upon a complete mix.
6. Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
   = (0.1(WQC - background conc.) + background conc.) for human health
7. WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	1.9E+03
Arsenic	4.8E+02
Barium	na
Cadmium	1.7E+00
Chromium III	1.1E+02
Chromium VI	3.2E+01
Copper	1.1E+01
Iron	na
Lead	1.2E+01
Manganese	na
Mercury	2.5E+00
Nickel	2.8E+01
Selenium	1.6E+01
Silver	1.3E+00
Zinc	1.0E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

0.250 MGD DISCHARGE FLOW - STREAM MIX PER "Mix.exe"

Discharge Flow Used for WQS-WLA Calculations (MGI 0.250

	Stream Flows Allocated to Mix (MGD)		Total Mix Flows Stream + Discharge (MGD)	
	Dry Season	Wet Season	Dry Season	Wet Season
1Q10	4.700	6.300	4.950	6.550
7Q10	5.100	N/A	5.350	N/A
30Q10	6.200	9.600	6.450	9.850
30Q5	7.000	N/A	7.250	N/A
Harm. Mean	12.900	N/A	13.150	N/A
Annual Avg.	0.000	N/A	0.250	N/A

Stream/Discharge Mix Values

	Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C)	21.267	15.549
30Q10 90th% Temp. Mix (deg C)	21.228	15.499
1Q10 90th% pH Mix (SU)	8.328	8.345
30Q10 90th% pH Mix (SU)	8.344	8.362
1Q10 10th% pH Mix (SU)	7.066	N/A
7Q10 10th% pH Mix (SU)	7.075	N/A

	Calculated	Formula Inputs
1Q10 Hardness (mg/L as CaCO3)	37.8	37.8
7Q10 Hardness (mg/L as CaCO3)	37.5	37.5

Ammonia - Dry Season - Acute

90th Percentile pH (SU)	8.328
(7.204 - pH)	-1.124
(pH - 7.204)	1.124
Trout Present Criterion (mg N/l	2.982
Trout Absent Criterion (mg N/L	4.465
Trout Present?	y
Effective Criterion (mg N/L)	2.982

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C)	21.228
90th Percentile pH (SU)	8.344
MIN	1.849
MAX	21.228
(7.688 - pH)	-0.656
(pH - 7.688)	0.656
Early LS Present Criterion (mg N	0.920
Early LS Absent Criterion (mg N/	0.920
Early Life Stages Present?	y
Effective Criterion (mg N/L)	0.920

Ammonia - Wet Season - Acute

90th Percentile pH (SU)	8.345
(7.204 - pH)	-1.141
(pH - 7.204)	1.141
Trout Present Criterion (mg N/l	2.888
Trout Absent Criterion (mg N/L	4.324
Trout Present?	y
Effective Criterion (mg N/L)	2.888

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C)	15.499
90th Percentile pH (SU)	8.362
MIN	2.675
MAX	15.499
(7.688 - pH)	-0.674
(pH - 7.688)	0.674
Early LS Present Criterion (mg N	1.290
Early LS Absent Criterion (mg N/	1.290
Early Life Stages Present?	y
Effective Criterion (mg N/L)	1.290

0.250 MGD DISCHARGE FLOW - COMPLETE STREAM MIX

Discharge Flow Used for WQS-WLA Calculations (MGI 0.250

	100% Stream Flows Allocated to Mix (MGD)		Total Mix Flows Stream + Discharge (MGD)	
	Dry Season	Wet Season	Dry Season	Wet Season
1Q10	4.700	6.300	4.950	6.550
7Q10	5.100	N/A	5.350	N/A
30Q10	6.200	9.600	6.450	9.850
30Q5	7.000	N/A	7.250	N/A
Harm. Mean	12.900	N/A	13.150	N/A
Annual Avg.	0.000	N/A	0.250	N/A

Stream/Discharge Mix Values

	Dry Season	Wet Season
1Q10 90th% Temp. Mix (deg C)	21.267	15.549
30Q10 90th% Temp. Mix (deg C)	21.228	15.499
1Q10 90th% pH Mix (SU)	8.328	8.345
30Q10 90th% pH Mix (SU)	8.344	8.362
1Q10 10th% pH Mix (SU)	7.066	N/A
7Q10 10th% pH Mix (SU)	7.075	N/A

	Calculated	Formula Inputs
1Q10 Hardness (mg/L as CaCO3) =	37.788	37.788
7Q10 Hardness (mg/L as CaCO3) =	37.505	37.505

Ammonia - Dry Season - Acute

90th Percentile pH (SU)	8.328
(7.204 - pH)	-1.124
(pH - 7.204)	1.124
Trout Present Criterion (mg N/l	2.982
Trout Absent Criterion (mg N/L	4.465
Trout Present?	y
Effective Criterion (mg N/L)	2.982

Ammonia - Dry Season - Chronic

90th Percentile Temp. (deg C)	21.228
90th Percentile pH (SU)	8.344
MIN	1.849
MAX	21.228
(7.688 - pH)	-0.656
(pH - 7.688)	0.656
Early LS Present Criterion (mg N	0.920
Early LS Absent Criterion (mg N/	0.920
Early Life Stages Present?	y
Effective Criterion (mg N/L)	0.920

Ammonia - Wet Season - Acute

90th Percentile pH (SU)	8.345
(7.204 - pH)	-1.141
(pH - 7.204)	1.141
Trout Present Criterion (mg N/l	2.888
Trout Absent Criterion (mg N/L	4.324
Trout Present?	y
Effective Criterion (mg N/L)	2.888

Ammonia - Wet Season - Chronic

90th Percentile Temp. (deg C)	15.499
90th Percentile pH (SU)	8.362
MIN	2.675
MAX	15.499
(7.688 - pH)	-0.674
(pH - 7.688)	0.674
Early LS Present Criterion (mg N	1.290
Early LS Absent Criterion (mg N/	1.290
Early Life Stages Present?	y
Effective Criterion (mg N/L)	1.290

10/11/2012 8:26:11 AM

Facility = Floyd - Floyd County PSA WWTP
Chemical = cyanide (ug/L)
Chronic averaging period = 4
WLAa = 110
WLAc = 28
Q.L. = 5.0
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 7.1
Variance = 18.1476
C.V. = 0.6
97th percentile daily values = 17.2772
97th percentile 4 day average = 11.8129
97th percentile 30 day average= 8.56297
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

7.1

10/11/2012 4:08:58 PM

Facility = Floyd-Floyd County PSA WWTP
Chemical = TRC (ug/L)
Chronic averaging period = 4
WLAa = 94
WLAc = 59
Q.L. = 1000
# samples/mo. = 30
# samples/wk. = 8

Summary of Statistics:

observations = 1
Expected Value = 10000
Variance = 3600000
C.V. = 0.6
97th percentile daily values = 24334.1
97th percentile 4 day average = 16637.9
97th percentile 30 day average= 12060.5
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 86.2919122591406
Average Weekly limit = 51.4735645348057 0.051 mg/L
Average Monthly LImit = 42.7680979862429 0.043 mg/L

The data are:

10000

10/11/2012 10:44:14 AM

Facility = Floyd - Floyd County PSA WWTP
Chemical = copper, dissolved (ug/L)
Chronic averaging period = 4
WLAa = 27
WLAc = 21
Q.L. = 5
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 1000
Variance = 360000
C.V. = 0.6
97th percentile daily values = 2433.41
97th percentile 4 day average = 1663.79
97th percentile 30 day average= 1206.05
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 27
Average Weekly limit = 27
Average Monthly LImit = 27

The data are:

1000

10/9/2012 8:51:37 AM

Facility = Floyd - Floyd County PSA WWTP
Chemical = zinc, dissolved (ug/L)
Chronic averaging period = 4
WLAa = 250
WLAc = 270
Q.L. = 10
# samples/mo. = 1
# samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 60
Variance = 1296
C.V. = 0.6
97th percentile daily values = 146.005
97th percentile 4 day average = 99.8274
97th percentile 30 day average= 72.3631
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are:

60

10/10/2012 4:04:47 PM

Facility = Floyd - Floyd County PSA WWTP
Chemical = ammonia (mg/L) Jan. - May
Chronic averaging period = 30
WLAa = 19
WLAc = 13
Q.L. = 0.2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity
Maximum Daily Limit = 19
Average Weekly limit = 13.8974302985117
Average Monthly LImit = 10.3517691139499

The data are:

9

10/9/2012 8:47:47 AM

Facility = Floyd - Floyd County PSA WWTP
Chemical = ammonia (mg/L) June - Dec.
Chronic averaging period = 30
WLAa = 15
WLAc = 5.9
Q.L. = 0.2
# samples/mo. = 12
# samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average= 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 11.9042535511562
Average Weekly limit = 8.70729126226338
Average Monthly LImit = 6.48579390713091

6.5
8.7

The data are:

9

Attachment H

Regional Water Quality Model (Version 4.0)

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge to DODD CREEK.

File Information

File Name:	C:\Documents and Settings\blfrance\My Documents\Working files\BECKY\
Date Modified:	May 29, 2008

Water Quality Standards Information

Stream Name:	DODD CREEK
River Basin:	New River Basin
Section:	2
Class:	V - Stockable Trout Waters
Special Standards:	None

Background Flow Information

Gauge Used:	03170000
Gauge Drainage Area:	300 Sq.Mi.
Gauge 7Q10 Flow:	42.7 MGD
Headwater Drainage Area:	0 Sq.Mi.
Headwater 7Q10 Flow:	5.172423 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges:	0 MGD
Incremental Flow in Segments:	0.1423333 MGD/Sq.Mi.

Background Water Quality

Background Temperature:	24.3 Degrees C
Background cBOD5:	2 mg/l
Background TKN:	0 mg/l
Background D.O.:	6.996149 mg/l

Model Segmentation

Number of Segments:	1
Model Start Elevation:	2230 ft above MSL
Model End Elevation:	2180 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge to DODD CREEK.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	FLOYD-FLOYD COUNTY PSA WWTP
VPDES Permit No.:	VA0025992

Discharger Flow Information

Flow:	0.25 MGD
cBOD5:	30 mg/l
TKN:	18.5 mg/l
D.O.:	3 mg/l
Temperature:	18.5 Degrees C

Geographic Information

Segment Length:	3.6 miles
Upstream Drainage Area:	0 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	2230 Ft.
Downstream Elevation:	2180 Ft.

Hydraulic Information

Segment Width:	15.001 Ft.
Segment Depth:	0.779 Ft.
Segment Velocity:	0.717 Ft./Sec.
Segment Flow:	5.422 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Wide Shallow Arc
Character:	Moderately Meandering
Pool and Riffle:	Yes
Percent Pools:	50
Percent Riffles:	50
Pool Depth:	1 Ft.
Riffle Depth:	0.52 Ft.
Bottom Type:	Silt
Sludge:	None
Plants:	None
Algae:	None

"Model Run For C:\Documents and Settings\blfrance\My Documents\Working files\BECKY\PERMITS\VPDES\Floyd WWTP\Reissuance 2008\Data\Model Min DO 2008 6.mod On 5/29/2008 1:52:54 PM"

"Model is for DODD CREEK."
"Model starts at the FLOYD-FLOYD COUNTY PSA WWTP discharge."

"Background Data"

"7Q10"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
5.1724,	2,	0,	6.996,	24.3

"Discharge/Tributary Input Data for Segment 1"

"Flow"	"cBOD5"	"TKN"	"DO"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
.25,	30,	18.5,	,3,	18.5

"Hydraulic Information for Segment 1"

"Length"	"Width"	"Depth"	"Velocity"
"(mi)"	"(ft)"	"(ft)"	"(ft/sec)"
3.6,	15.001,	.779,	.717

"Initial Mix Values for Segment 1"

"Flow"	"DO"	"cBOD"	"nBOD"	"DOSat"	"Temp"
"(mgd)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"(mg/l)"	"deg C"
5.4224,	6.812,	8.227,	3.094,	7.816,	24.03259

"Rate Constants for Segment 1. - (All units Per Day)"

"k1"	"k1@T"	"k2"	"k2@T"	"kn"	"kn@T"	"BD"	"BD@T"
.3,	.361,	8.333,	9.17,	.05,	.068,	0,	0

"Output for Segment 1"
"Segment starts at FLOYD-FLOYD COUNTY PSA WWTP"

"Total" "Dist."	"Segm." "Dist."	"DO"	"cBOD"	"nBOD"
"(mi)"	"(mi)"	"(mg/l)"	"(mg/l)"	"(mg/l)"
0,	0,	6.812,	8.227,	3.094
.1,	.1,	6.861,	8.202,	3.092
.2,	.2,	6.907,	8.177,	3.09
.3,	.3,	6.949,	8.152,	3.088
.4,	.4,	6.988,	8.127,	3.086
.5,	.5,	7.024,	8.102,	3.084
.6,	.6,	7.034,	8.077,	3.082
.7,	.7,	7.034,	8.052,	3.08
.8,	.8,	7.034,	8.027,	3.078
.9,	.9,	7.034,	8.002,	3.076
1,	1,	7.034,	7.977,	3.074
1.1,	1.1,	7.034,	7.952,	3.072
1.2,	1.2,	7.034,	7.928,	3.07
1.3,	1.3,	7.034,	7.904,	3.068
1.4,	1.4,	7.034,	7.88,	3.066
1.5,	1.5,	7.034,	7.856,	3.064
1.6,	1.6,	7.034,	7.832,	3.062
1.7,	1.7,	7.034,	7.808,	3.06
1.8,	1.8,	7.034,	7.784,	3.058
1.9,	1.9,	7.034,	7.76,	3.056
2,	2,	7.034,	7.736,	3.054
2.1,	2.1,	7.034,	7.712,	3.052
2.2,	2.2,	7.034,	7.688,	3.05
2.3,	2.3,	7.034,	7.664,	3.048
2.4,	2.4,	7.034,	7.64,	3.046
2.5,	2.5,	7.034,	7.617,	3.044
2.6,	2.6,	7.034,	7.594,	3.042

2.7,	2.7,	7.034,	7.571,	3.04
2.8,	2.8,	7.034,	7.548,	3.038
2.9,	2.9,	7.034,	7.525,	3.036
3,	3,	7.034,	7.502,	3.034
3.1,	3.1,	7.034,	7.479,	3.032
3.2,	3.2,	7.034,	7.456,	3.03
3.3,	3.3,	7.034,	7.433,	3.028
3.4,	3.4,	7.034,	7.41,	3.026
3.5,	3.5,	7.034,	7.387,	3.024
3.6,	3.6,	7.034,	7.364,	3.022

"END OF FILE"

Attachment I

Public Notice

PUBLIC NOTICE – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Floyd County, Virginia
PUBLIC COMMENT PERIOD: November 2, 2012 through December 3, 2012 at 4:30 pm
PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board
APPLICANT NAME, ADDRESS, AND PERMIT NUMBER: Floyd-Floyd County Public Service Authority (PSA), PO Box 407, Floyd, Virginia, VA0025992
FACILITY NAME AND LOCATION: Floyd-Floyd County PSA WWTP, 169 PSA Road (off State Route 221), Floyd, Virginia 24091
PROJECT DESCRIPTION: Floyd-Floyd County PSA has applied for a reissuance of a permit for the wastewater treatment plant in Floyd County. The applicant proposes to release treated sewage wastewater from residential areas at a rate of 250,000 gallons per day from the current facility into a water body. Sludge from the treatment process will be disposed of at a landfill. The facility proposes to release the treated sewage into Dodd Creek in Floyd County in the West Fork Little River Watershed (VAW-N20R). A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: nutrients, organic matter, solids, metal (copper).
TOTAL MAXIMUM DAILY LOAD DEVELOPMENT FOR LITTLE RIVER WATERSHED: This TMDL was approved by the Environmental Protection Agency on March 14, 2012 and can be found at the following website: http://www.deq.virginia.gov/portals/0/DEQ/Water/TMDL/apptmdls/newrvr/littlervr.pdf The original TMDL was designed to accommodate increases in permit capacity such as the revised flow discharge rate of 250,000 gallons per day for the previously permitted facility, Floyd-Floyd County PSA WWTP. Updating the sediment allocations in the *Bacteria, Benthic, and Temperature TMDL in the Little River Watershed* will be consistent with the facility's total suspended solids limitations.
HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax, or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for a public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if a public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.
CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS, AND ADDITIONAL INFORMATION: Becky L. France; ADDRESS: Virginia Department of Environmental Quality, Blue Ridge Regional Office, 3019 Peters Creek Road, Roanoke, VA 24019-2738; (540) 562-6700; E-MAIL ADDRESS: becky.france@deq.virginia.gov; FAX: (540) 562-6725. The public may review the draft permit and application at the DEQ office named above (by appointment) or may request copies of the documents from the contact person listed above.

Attachment J

EPA Checksheet

Revised 2/2003

State "FY2003 Transmittal Checklist" to Assist in Targeting Municipal and Industrial Individual NPDES Draft Permits for Review

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Floyd – Floyd County PSA WWTP

NPDES Permit Number: VA0025992

Permit Writer Name: Becky L. France

Date: 9/19/12

Major [ ] **Minor** [X] **Industrial** [ ] **Municipal** [X]

I.A. Draft Permit Package Submittal Includes:	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet **or** permit contain a description of the wastewater treatment process?	X		

I.B. Permit/Facility Characteristics – cont. (FY2003)	Yes	No	N/A
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed? (very minor)	X		
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water? bacteria	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit? Backsliding allowed due to new information	X		
10. Does the permit authorize discharges of storm water?			X
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?			X
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES raft Permit Checklist (FY2003)

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether "antibacksliding" provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for ALL of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL? (E. coli)	X		

II.D. Water Quality-Based Effluent Limits – cont. (FY2003)	Yes	No	N/A
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a "reasonable potential" evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the "reasonable potential" evaluation was performed in accordance with the State's approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have "reasonable potential"?	X		
d. Does the fact sheet indicate that the "reasonable potential" and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which "reasonable potential" was determined?	X		
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an "antidegradation" review was performed in accordance with the State's approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?			X
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont. (FY2003)	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?			X
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?			X
a. Does the permit require implementation of the "Nine Minimum Controls"?			X
b. Does the permit require development and implementation of a "Long Term Control Plan"?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate/ Pretreatment Program requirements?			X

II.G. Standard Conditions	Yes	No	N/A
1. Does the **permit** contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		

List of Standard Conditions – 40 CFR 122.41

Duty to comply
Duty to reapply
Need to halt or reduce activity not a defense
Duty to mitigate
Proper O & M
Permit actions

Property rights
Duty to provide information
Inspections and entry
Monitoring and records
Signatory requirement
Bypass
Upset

Reporting Requirements
Planned change
Anticipated noncompliance
Transfers
Monitoring reports
Compliance schedules
24-Hour reporting
Other non-compliance

2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?	X		

Part II. NPDES Draft Permit Checklist (FY2003)

Region III NPDES Permit Quality Review Checklist – For Non-Municipals

(To be completed and included in the record for <u>all</u> non-POTWs)

----------NOT APPLICABLE----------

Part III. Signature Page (FY2003)

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	Becky L. France
Title	Water Permit Writer
Signature	Becky L France
Date	9/19/12